Psychological aspects of physical disability

FEDERAL SECURITY AGENCY

Office of Vocational Rehabilitation Washington, D. C.

HM291
G192

AMERICAN FOUNDATION
FOR THE BLIND INC.

William Pickman
601 E 170 St.
Bronx, 56, NY
Phone Dayton 9-0581
C.3

Psychological aspects of physical disability

JAMES F. GARRETT, Editor

FEDERAL SECURITY AGENCY

Office of Vocational Rehabilitation

Rehabilitation Service Series Number 210

For sale by the Superintendent of Documents, U. S. Government Printing Office
Washington 25, D. C. — Price 45 cents

HM291
G192 copy three

FOREWORD

AS WORKERS in the field of rehabilitation we are realizing more and more that we do not "rehabilitate" people. Rather we must be able to reach the heart and mind of the individual with whom we are dealing, so he will want to avail himself of the services our program can provide for him. His drive to accomplish his own rehabilitation must come from within himself and we must be sensitive too in the factors that can help or hinder establishing this indispensable primary base for rehabilitation. Increasingly we are learning that human motivation is influenced by many things. Especially important are the psychological and social factors of an individual's life. These factors are important to consider early in our planning for the whole program of rehabilitation for the individual and in the evaluation of each step of its development.

This bulletin will reveal that there is no simple prescription for dealing with the emotional factors of disability. One fact does stand out, however, from a study of this material, there is no one personality characteristic which distinguishes one disability group from another. Rather, we come away from the reading of these essays with the feeling that people with so-called handicaps differ from those without them and from each other, in about the same way and in the same proportion as each person differs from any other regardless of his characteristics. Ones early training in the home, his life experiences, his values and ideals, all of these influence his reaction to his disability.

It has been encouraging to us to have the evidence reflected in this volume of such wide interest in this phase of our program. Although the contents of this bulletin are not necessarily a reflection of the policies of the Office of Vocational Rehabilitation and the viewpoints expressed are primarily those of the authors, nevertheless the fact that such a distinguished group of outstanding authorities in their respective fields were willing to put this material together for us, is

proof of the importance of the rehabilitation program, and especially of this phase of it. The wide representation of agencies and professions reflects the diversity of interest in rehabilitation and augers well for the future. We hope that this bulletin will be a useful and inspiring basic document for all workers in the field of rehabilitation of the disabled.

Mary E. Switzer
Director, Office of Vocational Rehabilitation

PREFACE

THIS BULLETIN was written primarily for vocational rehabilitation counselors. It is expected that it will assist them in planning better rehabilitation programs. The need for awareness of the psychological adjustment mechanisms of the physically disabled is not confined to the counselor, however, and it is hoped that physicians, social workers, psychologists, and placement specialists may profit from the contents of this publication. The cooperation and coordination of the various specialties is the most important element today in providing rehabilitation services for the disabled whereby they may take their rightful place as contributing members of society.

Unfortunately the exigencies of publication prevented the incorporation into this bulletin of the chapter on cardiovascular disability. This will be issued as a supplement within the near future.

The interest and cooperation of the authors and the organizations many of them represent is a practical demonstration of the vital nature of the material presented herein. We are aware of the fact that successful rehabilitation programs depend on integrated community activity and in a sense this bulletin epitomizes that approach.

We acknowledge the assistance of several members of our Program Services Staff in reading some of the chapters—Edgar B. Porter, Boyce R. Williams, Salvatore G. DiMichael, and James R. Burress.

James F. Garrett, Ph.D., Editor
Chief, Division of Program Services
Office of Vocational Rehabilitation

TABLE OF CONTENTS

Chapter and Author	*Page*
1 Team Approach in Rehabilitation and the Psychologist's Role [Rusk and Taylor]	1
2 Psychiatric Aspects of Physical Disability [Menninger]	8
3 The Social Psychology of Adjustment to Physical Disability [Barker and Wright]	18
4 Psychological Problems of Poliomyelitis [Seidenfeld]	33
5 Paraplegia [Berger]	46
6 Cerebral Palsy [Garrett]	60
7 Psychological Factors in Multiple Sclerosis [Harrower and Herrmann]	68
8 Acceptance of Loss—Amputations [Dembo, Ladieu and Wright]	80
9 Psychological Aspects of Tuberculosis [Harris]	97
10 Facial Disfigurement [Abel]	112
11 The Deaf [Levine]	125
12 The Hard of Hearing [Lane]	147
13 Partially Seeing [Young]	162
14 The Blind [Lowenfeld]	179

LIST OF AUTHORS

HOWARD A. RUSK, M.D.
Professor and Chairman, Physical Medicine and Rehabilitation, NYU College of Medicine, NYU—Bellevue Medical Center

EUGENE J. TAYLOR, M.A.
Assistant Professor, Physical Medicine and Rehabiltation, NYU College of Medicine, NYU—Bellevue Medical Center

KARL A. MENNINGER, M.D.
Professor of Psychiatry, University of Kansas and the Menninger Foundation, Topeka Kansas

ROGER G. BARKER, Ph.D.
Professor of Psychology, University of Kansas

BEATRICE A. WRIGHT, Ph.D.
Lawrence, Kansas

Morton A. Seidenfeld, Ph.D.
Director, Psychological Services and Health Education,
National Foundation for Infantile Paralysis
Stanley Berger, Ph.D.
Chief Psychologist, Institute of
Physical Medicine and Rehabilitation,
NYU—Bellevue Medical Center
James F. Garrett, Ph.D.
Chief, Division of Program Services
Federal Security Agency
Office of Vocational Rehabilitation
Molly Harrower, Ph.D .
New York City, N. Y.
Rosalind Herrmann, B.A.
New York City, N. Y.
Tamara Dembo, Ph.D.
Department of Social Relations
Harvard University
Gloria Ladieu, Ph.D.
LaGrange Highlands, Illinois
Daniel H. Harris, Ph.D.
Director of Research
Saranac Lake Study and Craft Guild
Theodora M. Abel, Ph.D.
Director, Psychological Services,
Institute for Psychotherapy
Edna S. Levine, Ph.D.
Director, Psychological Services
Lexington School for the Deaf
New York City, N. Y.
Helen S. Lane, Ph.D.
Principal, Central Institute for the Deaf
St. Louis, Mo.
Marjorie A. C. Young, M.A.
Consultant in Education,
National Society for the Prevention of Blindness
Berthold Lowenfeld, Ph.D.
Superintendent
California School for the Blind
Berkeley, California

Digitized by the Internet Archive
in 2010 with funding from
Lyrasis Members and Sloan Foundation

http://www.archive.org/details/psychologicalasp00jame

TEAM APPROACH IN REHABILITATION AND THE PSYCHOLOGIST'S ROLE

Howard A. Rusk and Eugene J. Taylor

Improvement in the health of the American people since 1900 constitutes one of the great achievements of the past half century. It has been estimated, from fossil findings, that in prehistoric times, the average man lived about 18 years, his life frequently terminating in violent death. This had advanced to around 25 during the time of the ancient Romans and by 1900, in the United States, had reached an unprecedented 49.2, a gain of nearly 100 percent in 2,000 years. From an average lifetime of 49.2 years in 1900, we have in but a short fifty years, increased man's life expectancy in the United States to 67.2 years, a gain of more than 18 years in less than 50 years.

The health situation in the United States at the beginning of this century was marked by a high incidence of typhoid fever, scarlet fever, whooping cough, measles, diphtheria, smallpox and malaria. Today these conditions have been practically eliminated as causes of death. Infant mortality has been reduced to one-quarter of its rate in 1900 and maternal mortality to an even smaller fraction.

The control of disease and the lengthening of average lifetime stem from the great advances in medical science, the increase in medical services, the progress in public health practices, and the rapid rise in our standard of living. Every branch of medicine has made great progress through discovery and invention. A new era of medical science set in less than a century ago with the discovery of the bacterial origin of infection. Today, with recently developed chemical substances, antibiotics and hormone therapy, we are on the threshold of another new era.

These scientific and social advances have saved lives, but, at the same time, they have created new problems. In 1900, four in every 100 Americans were 65 years of age and older; today the proportion is almost 8 in every 100. Illness and disability strike at all ages, but the aged are their particular targets. In one comprehensive study, the rate of acute and chronic disabling illness among the age group 65 and over was 729 per thousand as compared to 171 for persons of all ages.

These developments—the scientific advances and the increasing longevity of our population—have made themselves felt already in many ways. They will influence our living patterns and our economy even more in years to come.

When asked at the beginning of 1950 to comment on the events of greatest significance which had occurred in the first half of this century, Mr. Bernard M. Baruch, with his usual sagacity, listed the increase of man's life span by 18 years in a period of 50 as having more profound medical, economic and social implications than such things as atomic energy, air transportation and communication. The problems which we face as a result of increased longevity are problems which extend far beyond any one discipline, agency, or group; they are problems for the nation as a whole. As Piersol and Bortz have so aptly said, "The society which fosters research to save human life cannot escape responsibility for the life thus extended. It is for science not only to add years to life; but more important, to add life to the years."

As our population becomes older, it can be expected that the incidence of chronic disease and its resultant physical disability will increase correspondingly; studies indicate the higher the age group, the greater the percentage of chronic disease and disability. In the National Health Survey 1935 to 1936, the following incidence rates per 1,000 persons were found of persons with a chronic disease or impairment on a given day; over 65 years of age, 515; aged 45 to 64, 309; aged 20 to 44, 177; aged 5 to 19, 70; and under age 5, 34. Rates for total and permanent disability per 1,000 population were: over aged 65, 75, aged 45 to 64, 22; aged 20 to 44, 8; aged 5 to 9, 4; and under aged 5, 1.6.

In the 25-year study that the U. S. Public Health Service has conducted among 2,000 white families in the town of Hagerstown, Maryland, it was found that at 25, about 35 of every 1,000 persons have some chronic illness or some major disability; at 45, the rate gradually rises to about 100 chronic cases in 1,000 men and women. After that, there is a much steeper climb, with nearly 250 out of 1,000 chronically ill at 60. At 80, more than half of the group needs regular medical care; and at 90, the rate is more than 900 per 1,000.

Lacking specific measures in the cure of many of the chronic diseases, medicine must look to rehabilitation to teach those afflicted by disability to live and to work as effectively as possible. Until medicine finds the specific answers to the problems of the diseases of the heart and circulation, rheumatic fever and arthritis, cerebral palsy, multiple sclerosis, poliomyelitis, and the other crippling diseases, we must utilize the techniques of physical rehabilitation, psychology, social service, vocational counseling, and the auxiliary specialties to teach the disabled to live within the

limits of their disabilities but to the full extent of their capacities.

Fundamental to the solution of the complex problems of the disabled individual is the team approach in which the various disciplines—medicine, psychology, sociology, and economics are brought together through the medium of the physician, nurse, physical therapist, occupational therapist, speech therapist, psychologist, social worker, vocational counselor, prosthetic specialist, recreation leader and others to focus on the individual as a whole in terms of his total environment and his total problems. There is probably no better example of Gestaltism than in the rehabilitation team, for the full force on the contribution of each of these disciplines can be brought to bear only in relationship to each other.

In accordance with these newer concepts of "total" care of the patient, medicine has been turning more and more, particularly in rehabilitation, to the psychologist for an assessment of emotional abilities, disabilities and potentialities of the disabled individual and assistance in developing programs of activity in which such psychological problems will be solved. It is true that the importance of psycho-social services and of the psychologist as an integral part of the rehabilitation team is still new and that many psychologists' tools must be redesigned and reevaluated in terms of these new uses.

Similarly, our techniques of integrating the contributions of the psychologist into the total rehabilitation team effort need study and refinement. The success that has been achieved thus far, however, with currently available psychological tools and relatively crude techniques of integration are indicative of the far greater results that will come in the future with continued research and experience.

Basic to this new development of the "team" concept of rehabilitation is our changing concept of disability. As the Task Force on the Handicapped of the Office of Defense Mobilization pointed out in the extremely significant report in early 1952, "When physical standards were drawn up during the first and second decades of this century, they were influenced by the 'anatomical' concept of medicine which was then in sway. Competence was measured in terms of anatomical perfection. A man was either fit or unfit for work, depending on whether or not he was anatomically whole. It was all or none. A man could do the whole job or none of it. He was disabled for all work if he was disabled for any part of it."

With the development of the physiological or functional concept of medicine and the specialization and subdivision of jobs into their components, the report states, the "perfect anatomical specimen" concept of man is no longer valid in determining suitability for employment.

With the "anatomical" concept of medicine gradually being replaced by this newer "functional" concept, it is apparent that medicine must rely more and more upon the psychologist and other members of the rehabilitation team.

Psychology's contribution to rehabilitation, however, is not limited to the role of the clinical psychologist. There is an equally important role for the social psychologist, for social attitudes toward physical disability are of extreme significance in the emotional adjustment of the handicapped individual. Both the emotional impact of physical disability upon the individual and social attitudes toward disability have commanded the attention of research, clinical and social psychologists since the advent of modern psychology. The theories they have advanced have been many and have varied from the widely accepted concept of Alfred Adler that disability serves as a motivating factor through compensation to the more recent social-psychological view of Roger G. Barker and others who believe that the physically handicapped person, being a member of a minority group and subject to the same economic and social pressures as other minority groups is likely to develop the same emotional outlook as those who are discriminated against because of age, sex, religion or race.[4] Although these two views may appear at first glance to be diametrically opposed in theory, they can be reconciled.

Physical defect has a unique, personal, and often deep, unconscious significance for the disabled person, for physique is one of the principal raw ingredients of personality. It also has social significance, for physique is one of the grounds upon which class and caste distinctions are made. Studies show that the most commonly used nicknames by children refer to physique, such as "Four-Eyes," "Fatty," "Slim," and "Freckles." Our comics and films have long utilized physical attributes of individuals for comedy effect. As Myerson has pointed out, if normal variations in physique, such as being strong or weak, tall or short, handsome or ugly, are important factors in personality formation, clearly the pathological variations known as physical disability are likely to be even more potent.

The physically disabled child at an early age requires an unusual amount of help and attention, and thus receives social status and self-esteem. However, as he becomes older, his reaction to his disability changes. He is more expensive in terms of both time and money. His parents may reject the child because of resentment or guilt. This rejection may then be transferred to the child, who, in turn, resents the parents. But, being dependent upon the parents, the child is forced to suppress his blame, which produced self-hostility, guilt and anxiety. On the other hand, the parents,

either from genuine sympathy or guilt reactions, may tend to overprotect the child, with equally harmful results. In either instance, the child's ego and social-status needs are frustrated.

As the child grows into adulthood, he becomes categorized as a member of a minority group. In many instances, he is socially ostracized and rejected by physically normal persons. He is discriminated against in employment, even for jobs which he is physically able to perform. The handicapped person is a marginal person—physically, socially, and economically; the many avenues of normal relationships which are blocked for him, either actually because of his disability, his attitude toward his disability, or social pressure, then tend to produce more frustration and conflict. Thus, the physically handicapped individual may bear the added burden of social rejection and emotional conflict.

Granted that such attitudes exist, it is important to remember, however, that they are not fixed, static attitudes either within the individual or within the social group. As Barker, Glonick and Wright have concluded:

1. Physically disabled persons more frequently than physically normal persons exhibit behavior which is commonly termed maladjusted. In almost every study, however, 35 to 45 percent of the disabled subjects are reported to be as well or better adjusted than the average nondisabled person.

2. The kinds of maladjusted behavior exhibited by physically disabled people are not peculiar to them; they are similar to those shown by nondisabled people. However, there is some evidence that withdrawing, timid, self-conscious behavior is more frequent in these people, though the opposite type of behavior is by no means infrequent.

3. There is no evidence of a relationship between kind of physical disability and kind of adjustment behavior; within a wide range of physical disabilities, the behavior results do not differ. However, it is possible that disabilities requiring a very special way of living or unique treatment over a long period of time, give rise to unique adjustments on the part of the patient.

4. It is probably true that persons with a long history of physical disability are more likely to exhibit behavior maladjustments than those with a short history of disability.

If there is such a wide variation among physically handicapped individuals in their emotional attitudes toward their disabilities, it is self-evident that such attitudes are dynamic and can be altered. The degree of potential change of attitude and the relative ease or difficulty with which such a change can be accomplished will, of course, vary with the individual and is dependent upon a complexity of factors, of which his disability is but one. It is here that the psychologist as a member of the

rehabilitation team bears a major responsibility, for he is the only member of the rehabilitation team who has the skills, training and experience to be able to assess and evaluate these various factors and translate them into therapeutic terms for his colleagues on the rehabilitation team. The success or failure of total team effort and of the individual contribution of each discipline may be directly related to the psychologist's efforts and ability. Just as attitudes on disability vary with individuals, social attitudes on disability have varied with history and still vary in different parts of the world. During World War I, for example, we were asked to believe that the withered arm of the Kaiser was responsible for his quest for power that led to war, and, during World War II, we repeatedly "explained" Goebbels in terms of his club foot. At the same time, however, we were "explaining" the greatness of Milton, Beethoven, Edison, Roosevelt and others in terms of their disabilities.

Similarly, facial scars in some cultures of Africa are such marks of distinction that wounds are self-inflicted. The same was true of the duelling scars of Heidelberg in pre-World War I. Yet, in New York and other large cities, persons with similar disfigurements suffer discomfort and spend money for their repair by plastic surgery. To the ancient Hebrews, illness and physical disability marked a person as a sinner—he was punished and was atoning for his wrongdoings. Disability to the ancient Greeks, on the other hand, was not a sign of sin but of inferiority. The early Christians, however, looked upon sickness and disability as a way to grace. Today, all of our major modern religions accord the sick and disabled a preferential position.

If attitudes vary in different cultures and different times, it is logical that they can be altered to conform with the more socially acceptable view of modern society. Progress in changing social attitudes is admittedly a slow progress, but some headway is now being made.

There is little doubt that psychology will play an increasingly important role in providing medicine with the increased technical skills and assistance it must have in meeting the problems of the growing numbers of persons suffering from chronic disability. Medicine's number one problem is no longer the acute, communicable diseases which claimed their victims with dramatic swiftness, but is the slow and insidious processes of the chronic diseases which leave disability in their wake.

REFERENCES

1. *The 1950 Yearbook of Physical Medicine and Rehabilitation.*—(December, 1949—January, 1951) Edited by Frank H. Krusen, M.D.; Associate Editors: Earl C. Elkins, M.D., and George G. Deaver, M.D. Chicago: Yearbook Publishers, 1951.

2. *The Disabled in the Modern World.*—Proceedings of the Fifth World Congress of the International Society for the Welfare of Cripples, 1951. New York: International Society for the Welfare of Cripples, 1952.
3. Rusk, Howard A., and Taylor, Eugene J.: *New Hope for the Handicapped.* New York, Harper and Brothers, 1949.
4. Barker, Roger G., and others: *Adjustment to Physical Handicap and Illness.* A Survey of the Social Psychology of Physique and Disability. New York: Social Science Research Council, 1946.
5. Elledge, Caroline, H.: *The Rehabilitation of the Patient.* Philadelphia: J. B. Lippincott Co., 1948.
6. Hamilton, Kenneth W.: *Counseling the Handicapped in the Rehabilitation Process.* New York: Ronald Press, 1950.
7. Kessler, Henry H. (Editor): *The Principles and Practice of Rehabilitation.* Philadelphia: Lea and Febiger, 1950.
8. Kessler, Henry H.: *Rehabilitation of the Physically Handicapped.* New York: Columbia University Press, 1947.
9. Soden, William H. (Editor): *Rehabilitation of the Handicapped.* A Survey of Means and Methods. New York: Ronald Press, 1949.
10. Wilson, Arthur Jess: *Emotional Life of the Ill and the Injured.* New York: Social Science Publishers, 1949.
11. Grayson, Morris; Power, Ann: and Levi, Joseph: Rehabilitation Monograph II: *Psychiatric Aspects of Rehabilitation.* New York: Institute of Physical Medicine and Rehabilitation, 1952.
12. McCoy, Georgia, and Rusk, Howard A.: Rehabilitation Monograph I: *An Evaluation of Rehabilitation.* New York: Institute of Physical Medicine and Rehabilitation, 1952.
13. *Building Happy Useful Lives for the Handicapped.*—Proceedings of the 1950 Annual Convention of the National Society for Crippled Children and Adults. Chicago: National Society for Crippled Children and Aults, 1951.

PSYCHIATRIC ASPECTS OF PHYSICAL DISABILITY

Karl A. Menninger

For 16 of her 25 years of twisted, deformed existence, Nellie R. has lived in a state institution for the mentally defective. But Nellie isn't feebleminded. Since birth her body has been wracked by jerking spasms which have prevented her from learning to talk or walk like other children not to mention all the other skills that most children learn. Doctors call her illness congenital cerebral palsy. Most people would say that Nellie's condition is hopeless, and no doubt that is why she was placed as a child in an institution for the mentally defective.

But stop by Nellie's chair a minute! With a needle clutched in the toes of one foot and a bit of cloth gripped in the toes of the other, Nellie is embroidering. With painful determination, her toes maneuver the needle into the penciled pattern on the cloth. Then, as her body is seized by spasms, she patiently waits until the flailing of legs and arms subsides before she doggedly directs the needle toward the next stitch. By tortuous process, Nellie is able to make six stitches an hour. Beside her on a table are articles she has already completed. Nellie is smiling, and pretty soon we are smiling too, sharing in the triumph of Nellie's mind and spirit over the limitations of her tortured body.

On the same ward, not far from Nellie's chair, we find Mary S., who is about Nellie's age and who is afflicted with the same crippling illness. But Mary never smiles. She spends her days rolling on her bed, abandoned to the spasms that seize her, sobbing most of the time. Thus has she spent the 17 years of her life.

"Oh!," but you may say, "Mary's illness must be of a more malignant kind or else it has progressed to a more severe degree." But this difference is not borne out by the results of clinical and neurological examinations.

What is the difference then, between the two girls? Why is Nellie able to embroider to her own great satisfaction and that of her friends, while Mary remains, to all practical purposes, as disabled as the mentally retarded children on the same ward? What are the forces of will, determination, courage, that sustain Nellie in her arduous, self-appointed task, and why does Mary lack these qualities? Or is she really lacking in these qualities?

—is it maybe, that we have not been able to reach them with our own determination and courage?

MOTIVATION

These questions are constantly on the minds of rehabilitation therapists who work with the physically disabled. Not long ago, there was only one answer to such questions—*Human nature.* If the rehabilitation worker contemplated the questions at all, or thought about the limitless implications of the age-old, cryptic answer, it was probably only to dream about the miracles he might perform in the repair of broken bodies and spirits, if he might only learn the laws of "human nature" and apply them in the treatment of his patients in much the same way that he utilized the wonderful new machinery that medical science was rapidly making available to him. For despite the marvelous mechanical efficiency of the new hydrotherapy and electrotherapy equipment, and the new devices for massage and traction patients continue to be stubbornly individualistic and unpredictable in their response to rehabilitation efforts.

Thus with the multiplication of ingenious mechanical devices for restoring impaired functioning, and with the development of elaborate educational and training methods for teaching compensating skills, the X-factor of "human nature" becomes an ever more challenging problem to rehabilitation specialists. For a long time this problem of human nature has been intuitively associated—and rightly so—with problems of motivation, in the minds of rehabilitation workers. Patients who were strongly motivated to get better frequently improved remarkably despite severe physical handicap, whereas mildly disabled patients who regarded themselves as hopeless invalids might remain just that till the end of their days. The logical corollary of this general clinical observation has been to devise means for increasing the motivation of those patients who are obviously poorly motivated. In accordance with this clinical rule of thumb, depressed patients are cheered up, timid patients are reassured and encouraged and exhorted to follow the example of bolder patients, and patients who appear to enjoy their invalid state are either scolded or threatened with reduction or termination of compensation payments. Sometimes these commonsense methods work; many times they don't.

The problem of motivation is an extremely complicated one, which, in its technical aspects, constitutes the psychiatric approach to rehabilitation. It is in this area that the psychiatrist, with his particular insight into the deep-lying irrational and unconscious forces that determine the direction and intensity of motivations, can make a specific contribution to the rehabilitation team. Under-

212229°—52——2

standing that the patient's professed motivation, however sincerely felt, is most probably a distorted reflection of the deeper, more powerful drives below the level of conscious awareness, he is in a position to recommend ways of handling patients that transcend the narrowly common-sense approaches.

For example, instead of trying to "cheer up" a severely depressed patient, the psychiatrist may endeavor to share his depression with him, recognizing that the depression is a normal and even necessary phase of adjustment if the patient is to be able eventually to accept his disability with all its implications for required changes in his way of living. Instead of praising the courage and initiative of the patient who laughs off his disability and insists on "walking alone," the psychiatrist may try to help him to acknowledge the strong dependency feelings behind his bold front and to accept a certain degree of dependence on others as a realistic aspect of his disability.

This "uncommonsense" approach to problems of motivation is, of course, not practicable for the average rehabilitation worker who has no technical training in psychiatry and who may not even have basic training in psychology. Readers may very properly raise the question, at this point: just how much technical knowledge of psychology, motivation and other psychiatric theory can a rehabilitation worker absorb and use?

Obviously, we can't go very deeply into these matters in this short chapter. But if the rehabilitation worker brings himself to realize that these psychological problems constitute a vast technical field of his profession that is generally neglected in many rehabilitation programs, he will already have made considerable progress in grasping the implications of psychiatry for his own specialized work with disabled patients. There are a few general principles which will further this insight and may prove of practical usefulness to the alert, intuitive rehabilitation worker.

Injury to a body organ causes injury to the patient's body image

One of the fascinating paradoxes of the human condition is that the human body, which unites us as a biological species, gives rise in each of us, on a psychological level, to a *body-image* that is one of the subtly unique features of the individual personality. In their investigations of personality development, psychologists and psychiatrists have considered the body image very important, because a person's conception of his own body has a great deal to do with a person's conception of his own personality and of his relations with other people. We have a body image not only of the body as a whole, but also of different parts of the body. One person takes particular pride in his muscular development, a musician or craftsman may take special care of his hands, some

people are preoccupied with the condition of the stomach or heart, etc., and we come to regard these preferences and preoccupations as essential personality attributes of family members and friends. As we have already suggested, the body image may be influenced by the individual's occupation or by outstanding beauty or shapeliness of particular parts of the body. To a certain extent, the body image is culturally determined. But the intimate association of body image with a person's sense of his own worth and his place among other people goes even deeper than this. It is largely through the discovery and exploration and functions of his own body that the little child first forms a conception of himself as a person distinct from other persons and other things. Into this original self-concept enter many irrational and symbolic associations that are a product of the child's immature mental functioning and of his inability to understand clearly what is going on about him. As a child grows older, his sense of personal worth and well-being is closely related to the skill and prowess of his body in play with his contemporaries. As we grow older, the body image changes in accordance to our particular life experiences, but even when we have reached maturity, the body image has an emotional coloring tinted by all the earlier body images back into early childhood and infancy. Although we have developed more mature and rational associations, the irrational associations and symbolic representations linger on in the unconscious.

What has all this to do with rehabilitation of the physically disabled? Just this: the rehabilitation worker should realize that he is treating not only disabled limbs, organs and bodies, but that he is treating the patient's body image of the broken limb, atrophied muscles, blinded eyes or paralyzed body. Just as surely as the psychiatrist does, the rehabilitation worker is treating the patient's personality, insofar as the patient's sense of personal worth, his conception of his relations to other people, his hopes and fears, his feelings of disgust, guilt, shame, wounded pride, are involved in the particular organ or limb or body system that has been disabled. The rehabilitation worker who cultivates a heartfelt appreciation of this principle cannot but regard his patients differently from the worker who believes (erroneously) that he is putting Mr. Brown's paralyzed leg through its daily exercise routine, or giving blind Mr. Smith a lesson in Braille, or helping one-legged Mr. Jones find a job that does not require two legs.

What has been said above about the irrational aspects of the body image gives us greater insight into the exaggerated emotional reactions, and in some cases what may appear to us as inappropriate emotional reactions, of patients who have suffered sudden injury to or loss of a part of the body. We all know patients who seem to react with excessive fear, apprehension or

depression to relatively mild injuries, while seriously disabled patients may react with strange calm or indifference. Others puzzle us by their seemingly inappropriate reactions of guilt or shame. Still others show varying degrees of childish immature behavior. It is helpful, in regulating our own emotional reactions and attitudes toward such patients, to bear in mind that the adult patient who has suffered sudden disablement has two kinds of adjustment to make: first, he must adjust himself to the realistic limitations and adaptations imposed by the disability; secondly, he is suddenly called upon to modify his body-image, his conception of himself, his relations to people, his work, in accordance with the nature and extent of disablement. This psychological adjustment may have implications for the patient that are far more crippling to his total functioning as a person, than the physical disability itself.

In the process of revising his body-image, the patient may experience a reawakening of long-forgotten conflicts and associations with emotionally painful events and feelings of the past, the result being that he falls back on immature patterns of behavior characteristic of his childhood. This regression, as we call it, is usually a temporary phase of the psychological adjustment to severe and sudden disablement. Generally, the rehabilitation worker can help the patient through this difficult period by sympathetically accepting the patient's childish or irrational behavior as a natural phase of his adjustment to his disability, much as one accepts the behavior of a child. This does not mean, however, that one should treat the patient like a child or adopt a patronizing attitude toward him. It is quite possible to accept regressed behavior as part of the present reality for the patient and at the same time identify oneself with the more mature aspects of his personality which must be supported if rehabilitation is to be successful.

The rehabilitation of physically disabled patients is complicated by their dependency problems

A physical disability by definition requires the patient to accept assistance from other people in areas of functioning where he has been accustomed to function without assistance. The more severe the disability, the greater the degree of dependency that is forced upon the patient. This dependent state may be only a temporary phase in the patient's rehabilitation, lasting only until the patient has acquired compensatory or adaptive skills. But in certain very severe types of disability, dependency is an attribute of the disability that the patient has to learn to accept. We know that many patients find it very difficult to adjust themselves to a dependent state, whereas others find it all too easy from the standpoint of wholesome psychological adjustment. It is in this

area that the rehabilitation worker's common-sense methods of handling the patient may result in failure because the worker's own feelings about dependency may cloud his objectivity. The worker, as well as the patient, is a product of our competitive culture that places a very high value on independence and the concealment of dependency needs. The important thing for the worker to remember is that most patients who have suddenly become disabled need some gratification of their dependency needs in the crucial period of emotional turmoil as they are becoming aware of the nature and extent of their disability. Patients must be encouraged to accept a *certain degree* of dependency as a permanent condition of their lives as disabled persons. The question as to how much dependency such patients must accept and how much responsibility and initiative they should be encouraged to assume in their future adjustment is, of course, entirely dependent upon the severity of the disability and the patient's resources for developing new skills and interests.

But the worker should remember that even those patients who show good motivation for rehabilitation and progress rapidly tend to have occasional brief lapses—strategic retreats, as it were—when their dependency needs once more reassert themselves in the form of requests or demands for the worker's assistance in tasks that the patient has shown himself well capable of handling alone. These brief lapses are usually not necessarily indications that the patient is "slipping." On the contrary, they quite often represent the patient's need for reassurance of the worker's support before going on to the learning of new tasks. In these circumstances then, the worker would be making a grave mistake by withdrawing support. On the contrary, he would give the requested support and at the same time encourage the patient to talk about developments in rehabilitation which have apparently caused the patient anxiety.

A very different kind of dependency problem is exemplified by the patient who makes light of his disability and insists on doing everything for himself, often making mistakes and suffering humiliation and defeat in the process. Such patients are likely to be admired for their "courage" and "independence," and may even be pointed out as models to more fearful patients. These pseudo-independent patients can be distinguished from realistically independent patients on the basis of their performance. All too often they come a cropper, thus revealing their real need for support, together with their need to be punished for such feelings. These patients are quite often more difficult to handle than those who frankly recognize their dependency needs, for they are so quick to become defensive when these needs are recognized by others. Taking care to be particularly tactful with those patients,

the worker can assist them considerably by planning a program of activities carefully graduated in difficulty, making sure that the activities are well within the patient's capabilities.

The permanently disabled patient must accept his handicap, not surrender to it

The decisive step in the rehabilitation of the permanently disabled person is his whole-hearted acceptance of his altered condition with all its implications for the long, slow climb ahead toward readjustment as a disabled person. At this crucial point, the patient has crossed the no-man's land of bewilderment, anxiety, doubt, indecision, fear, sometimes panic. Behind him is his old self with its intact body and body image, his familiar plans and hopes for the future, ahead of him, a disabled self which, although yet to be explored, has lost much of its desolate and lonely outlook. Although the way is uphill and by no means smooth climbing, he knows that at last he has found the right way and there is no turning back. Many disabled persons never find the way; they wander in the no-man's waste, wishfully thinking that some miraculous cure will be discovered which will eventually restore them to the old intact self, never finding the potentialities that might be theirs if they would cross into the disabled self.

Those who neither accept their handicap nor yield to it raise special problems for the rehabilitation worker. In such cases the educational approach is sometimes promising. Has the patient been told unequivocally of the nature and extent of his disability? If the patient's queries concerning his disability are met with vague or evasive replies, he may develop false hope of eventual recovery. As long as this hope is alive, he can never reach the stage of active acceptance which is his only hope so far as rehabilitation is concerned.

Another class of patient who is likely to reject his disability is the patient with the internal disability, for example, the cardiac patient. With this patient, it is not false hope of eventual recovery, but the possibility of masking the defect which may render him resistive to rehabilitation measures.

Although their problems are somewhat different, this would seem to be the appropriate place to say a few words about the psychological rehabilitation of congenital disabilities in children. Congenital cases raise distinctive problems because no matter how hard we try to understand the psychological implications of lifelong disability, we must acknowledge our inability to really comprehend the meaning of the symptoms for the patient's adjustment. Our first conjecture with regard to a child who is a victim of cerebral palsy or who has been deaf or blind since birth, is: How different this youngster must feel from the normal child! Then if, we consider that the normal child, too, frequently

has inner feelings of being "different," of being inferior to a parent or equals, we can begin to appreciate the incalculable burden of the defect upon the child's developing personality. Yet, at the same time, it is apparent that the child with congenital defect has a better chance for organizing a meaningful system of the capacities he has, of developing a self-concept and body image more in accordance with the facts, and of arriving at a more accurate and realistic evaluation of future goals than the child, or adult for that matter, who comes suddenly by a severe disablement. Our difficulties in making identifications with patients who have congenital defects is a two-edged sword in planning rehabilitation for them. On the one hand, we must take care not to over-estimate their capacities. On the other hand, we must take care not to under-estimate their ability to function with what they have, sometimes with amazing results.

WHAT CAN THE REHABILITATION WORKER DO?

In the preceding sections we have attempted to survey some of the characteristic psychological concomitants of physical disability that are relevant to the functions and responsibilities of the rehabilitation worker. The effects of physical injury on the patient's body image, the dependency problems displayed by physically injured patients, the ways in which they accept, reject, or merely surrender to the reality of physical defect, are the topics which have been discussed in a general way. It is difficult, and perhaps inadvisable, to give specific suggestions to the rehabilitation worker on a theme that is as broad as the one covered by this paper. It is possible, however, to point up the broad implications for the rehabilitation worker's relationship to his patients.

The rehabilitation worker should continually remind himself that he is treating not a body, a disabled organ, an impaired function, but a fellow human being whose disability is an integral part of his total personality. To the artist the loss of his eyes may mean the loss of the future; to the laborer his broken legs may mean a broken home; to the young man a paralyzed body may mean a paralyzed will. Neither the doctor, the rehabilitation worker, any of the mechanical aids to diagnosis, nor all of them together, can tell one tenth as much about the nature of a physical defect or illness as can the patient. For the disability is not so much what the examiner perceives it to be, as it is what the patient perceives it to be. It is the patient who suffers its pain, its continual presence, its effects on his feelings of dignity and worth, its crippling effects on his total functioning.

There is only one way that the rehabilitation worker can find out these things about the disabilities of his patients, and that is by getting to know his patients, coming to understand their prob-

lems, talking to them, and above all, *listening* to them. As he listens to his patients talking about their disabilities, their treatments, their goals in life both past and present, and how their goals have been altered by sickness and disability, he will come upon a deeper insight into the nature of the human body as the instrument for carrying out the intentions of the total personality.

And after he has talked and listened to many patients and tried to understand what he hears, he might get to thinking about how his particular specialized function on the rehabilitation team is related to the things his patients are telling him. He might begin thinking about such questions as: How can the patient be helped to accept goals which he is likely to be able to reach, and having set them how can he be helped to achieve them? How can his level of aspiration be raised if it is too low, and how can it be lowered if it is too high for the patient's comfort and capabilities? How can he turn his disappointments and frustrations into encouragement and renewed effort?

Again we come back to the problem of motivation, which was the question raised at the beginning of this chapter.

Personally, I am a great believer in the old-fashioned technique of inspiration, particularly as there is very little scientific knowledge to go by in this field. To be sure, in recent years the psychological sciences have provided us with much information concerning the nature and theory of motivation, but there have been few scientific investigations into techniques of motivation. A few words of encouragement to a paraplegic as you pass him pumping on his exercycle in the gym; * * * a brief talk with a desperately frightened, recently-blinded girl, in an attempt to help her to summon the hope and courage that is dormant within her * * * several minutes at the bedside of a small cerebral palsy victim, admiring her latest crayoning job and sharing in her plans for the next project. "But these are such little things," you say? Perhaps, but we are always under-estimating the power of little things.

Dr. Richard Cabot, Professor of Medicine at Harvard in the early part of the century, named four things men live by:—work, play, love and worship. Physical defect may impair one's ability to enter into one or all of these, but there is *no* physical disability that can destroy our ability to do any one of them. There is no one so physically disabled that he cannot do some kind of work, play in some fashion, invest love in someone, and find some way to worship. As long as we are human we can enjoy these activities, no matter how disabled our bodies may be.

John Galsworthy, the English novelist, speaking of rehabilitation and convalescence at the Allied Conference on the After-Care of Disabled Men, Washington, D. C., in 1919, said:

"Restoration is at least as much a matter of spirit as of body,

and must have as its central truth: Body and spirit are inextricably conjoined. To heal the one without the other is impossible. If a man's mind, courage and interest be enlisted in the cause of his own salvation, healing goes on apace, the sufferer is remade; if not, no mere surgical wonders, no careful nursing, will avail to make a man of him again. Therefore, I would say: 'From the moment he enters the hospital, look after his mind and his will; give him food; nourish him in subtle ways; increase that nourishment as his strength increases. Give him interest in his future. Light a star for him to fix his eyes on, so that, when he steps out of the hospital, you shall not have to begin to train one who for months, perhaps years, has been living, mindless and will-less, the life of a half-dead creature.'

"That this is a hard task, none who knows hospital life can doubt. That it needs special qualities and special effort, quite other than the average range of hospital devotion, is obvious. But it saves time in the end, and without it, success is more than doubtful. The crucial period is the time spent in the hospital. Use that period to recreate not only the body, but mind and will power, and all shall come out right; neglect to use it thus, and the heart of many a sufferer and of many a would-be healer will break from sheer discouragement. A niche of usefulness and self-respect exists for every man however handicapped; but that niche must be found for him. To carry the process of restoration to a point short of this is to leave the cathedral without a spire. To restore him, and with him the future of our countries, that is the sacred work."

REFERENCES

1. Adler, Alfred. *Study of organ inferiority and its physical compensation.* Nervous and Mental Disease Monograph, No. 24. 1917.
2. Allen, F. H. and Pearson, G. H. J.: *The emotional problems of the physically handicapped child.* Brit. J. Med. Psychol., 8:212-235, 1928.
3. Carlson, E. R.: *Born That Way,* New York, The John Day Co., 1941.
4. Cruickshank, Wm. H. and Dolphin, Jane E.: *A study of the emotional needs of crippled children.* J. Educ. Psychol., 40:295-305, 1949.
5. Dreikurs, Rudolf: *The socio-psychological dynamics of physical disability; a review of the Adlerian concept.* J. Soc. Issues 4 (4), 39-54, 1948.
6. Greenberg, Harold A.: *The management of emotional problems of crippled children in a new type of institution.* Amer. J. Orthopsychiat., 19:253-265, 1949.
7. Pinner, Max and Miller, B. F., editors: *When Doctors are Patients,* New York, Norton & Norton, 1952.
8. Seidenfeld, Morton A.: *The psychological care of the physically handicapped.* J. Occup. Ther., 2:25-28, 1948.
9. Stafford, G. T.: *Exercise during Convalescence,* A. S. Barnes, 1947.
10. Wiener, Daniel N.: *Personality characteristics of selected disability groups.* J. Clin. Psychol., 4:285-290, 1948.

THE SOCIAL PSYCHOLOGY OF ADJUSTMENT TO PHYSICAL DISABILITY

Roger G. Barker and Beatrice A. Wright

Every rehabilitation worker is in a position to help the handicapped progress toward better psychological adjustment. Toward this end there are some generally accepted principles. All agree, for example, that it is important to reduce the handicap where possible. Rehabilitation programs, therefore, include such services as surgical treatment, better prostheses and training in speech reading. Furthermore, everyone believes that handicapped persons should be contributing members of society. So we train the disabled in skills for which there is a demand and we encourage their employment. And yet, research has shown time and again that adjustment and degree of handicap are hardly correlated, if at all, and that merely reducing the handicap may have little adjustive effect *(1)*. The files of guidance clinics are filled with cases which demonstrate that employment, per se, does not solve many adjustment problems. Those who have worked with the physically handicapped know that adjustment to a disability is closely related to the attitudes and values of the disabled person and of those around him, and to a proper balancing of his needs, aspirations and achievements.

Though the adjustment problems of the disabled, as of any group, are in many respects unique to each particular individual, there are certain characteristics of the psychological living conditions of disabled persons in our culture which have general implications for their adjustment. We shall discuss two of these conditions because of their fundamental importance and because we believe that the rehabilitation worker can affect them favorably. The two conditions are the social devaluation and the insecurity of the disabled.

DEVALUATION OF THE DISABLED

Because of the value which society places on "body-whole" and "body-beautiful," a disabled person has to adjust to certain generally prevalent social-psychological facts. Probably the most far reaching of these is his social status. Often he is regarded by himself and others as inferior, not only with respect to his specific limitations, but as a total person. He may feel shame,

inferiority, even worthlessness. This general devaluation has some parallels with that of racial and religious groups. The Negro or the Jew, for example, are considered by some to be unworthy as human beings, or not acceptable as "100% Americans". The disabled too, are seen as an underprivileged minority by many *(2)*.

Not only is the disabled person often considered inferior, but it is also felt that he "ought" to feel inferior, that he "ought to know and feel his place" much in the manner of other underprivileged minority members. This hypothesis, known as the "requirement of mourning," was originally elaborated by Dembo and her co-workers in a general theory of misfortune *(5)*. It may not at first seem valid. For one thing, the requirement of mourning implies that men want others to suffer, and this is ethically objectionable. However, if we consider the following example, we can perhaps get some "feeling-insight" into the probable validity of this hypothesis:

> A man takes great pride in being an outstanding community member. He owns the best car, belongs to exclusive social clubs and abides by the most proper social amenities. These are the things he values most highly. It follows, therefore, that he must consider as unfortunate those who lack material possessions and are omitted from positions of prestige. Furthermore, if these unfortunates do not act the part, for example, if they do not envy him and regret their misfortune he must reject and devalue them, for otherwise his own security is threatened.

Similarly, a person who places a high value on physical beauty, strength and skill is under strong pressure to demand that the disabled person mourn his lack of these, depreciate himself, and envy the nondisabled. Such a person must do this in order to maintain physical beauty, strength and skill as central values upon which his security depends. And, parodoxically, the disabled person may also feel that he "ought" to feel inferior. This will occur as long as his value system remains that of the non-disabled majority, the group to which he wishes to belong and in many cases at one time did belong.

We see that the disabled are confronted with a serious situation because two basic psychological needs of man are the need for self esteem, i.e., for high self evaluation, and the need for social status, i.e., for high evaluation by others. For optimal adjustment these needs must be satisfied in some degree.

Changing the Self-Evaluation of the Disabled

What, then, must happen to the outlook of the disabled person in order that he regard himself as inferior *only in certain limited ways and not inferior as a person?* Basically a change must occur in his system of values so that "body-whole" and "body-beautiful" are felt to be good to have when present, but not disturbing when absent. Many things are valued in this way in our culture. Musical ability for example, is highly regarded; however,

its absence is not often seen to constitute a personal blemish. The psychological processes involved in this kind of adjustive value change are described, as far as they are known, in Chapter 8, Acceptance of Loss, of this book. Here we should like to point out that the overcoming of devaluative feelings in the disabled person involves to a large extent the same changes that must take place in the case of any normal person who has to accept the fact that in some restricted ways he is below standard. We can cite many examples of commonplace personal lacks that are sometimes seen as devaluating. The adult who cannot spell may wish above all to hide his lack because he feels stupid in general. The boy who is mechanically inept may feel ashamed of this and lacking in manliness. The woman who cannot have children may feel totally inferior and unworthy as a wife and human being. On the other hand, others with the same deficiencies accept them without apology; in these cases, the lack is confined to itself and does not spread to other areas in the life of the person. It would be worthwhile for the reader to think through a personal instance in which he was greatly dusturbed over some failing and which he gradually was able to take in his stride. We generally find important changes taking place in one's system of values in these cases.

In this area of self-evaluative feelings the rehabilitation worker can have tremendous influence for good or ill. One of the most important factors here is the relationship that exists between him and his clients. First of all, the worker-client relationship tends to be an asymetrical one in which the professional person has the higher status position. Just as in the case of doctor and patient, lawyer and client, or teacher and pupil the disabled person may easily feel in a dependent position in which it is hoped that the wisdom of the worker will guide him through his difficulties. But it is just such an atmosphere of a wise and powerful one, on the one hand, and a dependent, suppliant one on the other hand, that so easily can nourish the feelings of inadequacy and personal inferiority that true rehabilitation seeks to avoid. The inner strength and self-respect which we wish to build in the client grows in a relationship in which the disabled person feels that he has an important role in planning his life and that what he says and what he feels is respected. Experience with psychotherapy has long established this proposition as a psychological fact, and yet, because of excessve case load and other factors, all too often rehabilitation plans are "efficiently" mapped out with little participation on the part of the disabled person other than submission to certain test procedures. Even a disabled child needs to have a feeling that he knows what is happening to him and why, that he has a voice in the decisions. How much more true this is of the

person who has reached adulthood with all the independence of judgment and self-determination that this implies!

Barriers to Participation in the Rehabilitation Process

Though the disabled person may even consciously feel a need for active participation in rehabilitation procedures, there may be conflicting emotions which interfere with his accepting this role. We might mention, first, the need for dependence. This need is not readily admitted by many adults because of its negative social and ethical implications in our culture. Evidence of it is, therefore, likely to be indirect *(9)*. When it is present, however, leaving decisions to the rehabilitation worker gives the client a comfortable, safe feeling that comes when one sheds his responsibility and places his future in competent hands. Further, being the object of attention adds to the secondary gains of a handicap.

A second frequent barrier to full participation is the fear of the disabled person that he cannot be understood by non-disabled workers. He may feel that a real meeting of minds and hearts can only take place with someone who has experienced what he has experienced. Thus, he may see little point in even attempting to convey the complexities and the subleties of his disability that are of relevance to problems of rehabilitation.

Foremost of the forces resisting whole-hearted participation on the part of the disabled person is the very frequent, intense desire to be regarded as a nondisabled person, i.e., "to be treated like anyone else." For such a person to go into all the issues involved in the choice of a prosthesis or of a vocation, for example, brings him dangerously close to the full reality of his handicap. He can avoid confronting the reality he dislikes by remaining emotionally outside the rehabilitation procedures and having such matters determined for him. By going through the motions with as little involvement of himself as possible, he may hope to remain emotionally detached from what is to him an embarrassing and loathesome position, namely the position of being a disabled person. The very nature of the rehabilitation situation prevents him from completely forgetting or ignoring his handicap, but he may try to come as emotionally close to this as possible by being quite passive, noncritical and in some cases even indifferent to problems relating to the rehabilitation program. In spite of outward passivity, in many cases the disabled person feels an underlying, acute anxiety as to how successfully the rehabilitation program is making of him a normal, non-disabled person.

Finally, the disabled person may resist full participation because of a deep-seated fear that his disability has affected, not only his physique, but also his personality. The jump from nonnormality of the body to nonnormality of the mind is so fre-

quent in folklore and every day life that it is readily understandable why many disabled persons feel a relentless pressure to convince themselves and others that they are not defeated by their disabilities. To show that he is not maladjusted, a disabled person may agreeably acquiese to any suggestions made by the rehabilitation worker, thus avoiding meanings of the disability that reveal his personal involvement. For example, he might want very much to have an artificial hand instead of a hook as a prothesis, but to argue for it would in itself be to admit his sensitivity about his disability. Such a person may passively accept the plan of the rehabilitation worker, but never learn to use the hook efficiently because of the unresolved emotional resistance to it.

Forces Toward Participation in the Rehabilitation Process

Fortunately there are powerful forces pressing the disabled person to take an active role in facing the fact of his disability *(12)*. The first of these is a great need to accept himself as a disabled person. One can only temporarily forget a disability. One can act "as if" it did not exist only some of the time. Reality demands, such as recreational participation, educational programs, vocational choices and marriage, require that the disability be taken into account. The strain of trying to hide a disability, or to minimize its inconvenience and personal significance reaches a point where the person may welcome the relief of accepting himself as a disabled person. It may seem at first that it is the desire to be nondisabled which provides the needed motivation to work through difficulties toward improvement. Actually, where the nondisabled state cannot be reached, this desire can hinder effective rehabilitation. For example, the hard of hearing person who regards deafness as personally devaluating will resist using a hearing aid inasmuch as this visible sign will often lead him to be classed with the deaf. Instead of the powerful and often blind desire to be nondisabled, what is more adjustive is the desire to reduce where possible the objective restrictions imposed by the disability. Accepting oneself as a disabled person does not mean accepting oneself "as is". It means improving the improvable within a framework that is meaningful for the particular individual.

The disabled person also has a strong need to be understood as a disabled person. He certainly doesn't trust the acceptance he seeks, and to some degree achieves, when he tries to act as much like a "normal" person as possible. The security of genuine acceptance ultimately rests upon his discarding pretenses and accepting the real person that he is. Only then can the chasm between himself and the nondisabled shrink.

Constructive Worker—Client Relationships

What then can be said more particularly about worker-client relationships which will strengthen the forces in the disabled person that drive him toward participating actively in the rehabilitation process and reduce the forces that prevent his doing so? The atmosphere of the agency and the roles of the individual workers are of tremendous importance here. The worker-client relation has two sides. A client can remain dependent, detached, acquiescent and non-communicating and can avoid facing his disability only if the other party to the relationship responds appropriately, i.e., by being decisive, protective and dominant and by ignoring the disability. Similarly, pressures to participation in the rehabilitation program can be strengthened by an atmosphere that approves self-selected, realistic goals and self-accepting attitudes.

Basically an atmosphere must exist in which the client feels free to talk about the implications of his disability and the meanings it has for him. It should be made clear that the worker does not have the answers to the questions which will arise during the course of the rehabilitation program; that rather there has to be a mutual working through of problems where the feelings and opinions of the client are just as important as the knowledge and experience of the worker. The disabled person cannot feel that his opinions will be ignored; he must know that he is respected as a person and that his point of view is decisive.

The very fact that the rehabilitation situation is clearly one in which disability-connected matters must necessarily be brought up facilitates discussion of the handicap. The danger that the disabled person will consider the interest of the worker to be idle curiosity, which is so apt to be resented, is minimized. But the skill of the worker is shown when in the course of the give and take, the client begins to accept himself as a disabled person. With this growth toward acceptance, the disabled person can work realistically toward reducing the negative effects of his disability and can feel genuine success at whatever progress is made rather than feeling failure because he can never be a "nondisabled person."

The worker will be most effective when he is sensitive to the clues given by the client as to the course their relationship should take. Sometimes the disabled person may simply need the assurance that what he is thinking and feeling is understandable. Sometimes he may be ready to accept more active suggestions on the part of the rehabilitation worker. Being sensitive to the client means that the worker must take into account the emotional meanings of the disability for the client.

The attitudes of the rehabilitation worker himself toward physical disability will affect enormously his ability to be guided by the needs of the client. The highly sensitive minority group member, be he a disabled person or a person belonging to a "second rate" racial or religious group, can quickly detect covert feelings as pity, horror and aversion. It is therefore important that the rehabilitation worker be at least fairly well adjusted with respect to physical disability. Negative feelings must give way to sympathetic understanding and a conviction that a disability is not a calamity but rather a deviation to which one can adjust.

What we have said here are but brief indications of some of the conditions which affect the disabled person's self-evaluation and participation in the rehabilitation process. Each point is but the opening paragraph of a chapter of discussion. The essential point will be clear, however: physical disability, per se, is not psychologically disabling, although its sequelae, self and social devaluation, are. Rehabilitation procedures have a great influence upon the occurrence of these sequelae. Although training and physical restoration are important, the way they are accomplished determines, in large measure, their psychological effectiveness. There are other conditions, too, that affect the person's feeling of self esteem and social status; some of these are discussed in the following section of this paper.

INSECURITY OF THE DISABLED

Whether or not a disabled person devaluated himself, he still has to cope with another important aspect of his psychological situation, namely, insecurity. Many areas of his life may be characterized by a lack of definiteness as to what may happen, an uncertainty as to where he stands with respect to the world about him. The following are three important sources of insecurity.

Physical Insecurity

The cultural world of houses, jobs, automobiles and cities is devised with the requirements of a broad group of relatively "normal" people in view. For this group, society goes far to structure and define the physical conditions of life. Only if this is done, are people free to make plans with the expectation of carrying them out. When a physically normal person starts to work he generally knows what is possible and what is impossible for him in the way of perception, physical locomotions and manipulations, and he knows that within the limits of what is possible he can usually accomplish the day's tasks. He knows that the steps of the bus will be of a convenient height, that the seats will fit him, that the walk from the bus stop will not exhaust him, that the controls of the elevator will be within reach and that his

mployer's instructions will be understandable. He knows, in hort, that the world of cars, towns and offices, which society has onstructed, is made for his convenience. One can easily imagine he changed outlook of a physically normal person as he started o work if he knew that the steps of the bus might be five feet igh, that the seats might be without backs, that his office might urn out to be ten miles from the bus station, that the controls f the elevator might be ten feet above the floor, and that he might e unable to hear his employer.

This is, in some degree, the position of the physically handi-apped person in a "normal" world. In many situations he is aced with a much greater uncertainty than are normal persons s to whether he will be able to carry out the locomotions, manip-ulations and perceptions necessary to achieve his purposes. This an be very frustrating and anxiety producing as the following ncident, related by Raymond Leslie Goldman, who was hard of earing indicates (6).

"I am in a classroom. The class is a Latin recitation. We hold our books pen at a certain page and one by one, as the teacher calls our names, we rise and translate the text, the bidden student taking up where his predecessor left off. I studied conscientiously the night before; I am thoroughly prepared. Yet, agony fills me. I am cold with terror, wretched with desperation, stricken by a sense of impending disaster.

"I do what I can to avoid the horror of catastrophe. I try to save myself with my eyes. But I ask too much of my perceptive wits. My eyes must be on the teacher's lips whenever she happens to call my name. Even so, shall I know whether she says Goldman, or Goldsmith, or Gorham, or Bowman? I must be careful not to rise if it is one of the others whose name has been called.

"And how shall I know where to begin, granting that I rise at the correct time? I know with what page we began; I made certain of it by looking over the shoulder of the student in front of me. I turn a page whenever the others turn theirs. But where, on two pages, are they? I watch the reciting student. If he is behind me, I turn and see his face, but I cannot read Latin from his lips. If he is in front of me, I watch the back of his head. I can tell whether we are on the left-hand or right-hand page. The head is turned slightly to the left; the chin slowly sinks; then suddenly the chin goes up and the head turns a little to the right. The right-hand page! But what paragraph? What sentence? My classmate sits down. Look at the teacher! Oh, God, why does she hold down her head that way, looking at the recitation cards! What did she say? Gorham, Goldman, Bowman * * * ?

"In spite of my desperate efforts I wasn't always successful. There were times when I didn't rise when the teacher called my name, and sometimes I rose when she called on someone else. On one occasion I thought she spoke my name and I got up and began to recite. The class broke into laughter. Behind me, the boy whose name had been called, had risen and begun to recite before I got to my feet. When I got up and joined in, like a second alto coming into a musical round, the teacher had every right to look startled." (p. 67–68).

212229°—52——3

Social Insecurity

In addition to the increased hazards and uncertainties arising from his physical situation, the handicapped person is faced with a similar state of affairs in his social world. The conflicting attitudes of normal persons toward the handicapped have been thoroughly established *(1)*. Acceptance and rejection, sympathy and pity, trust and fear, valuation and devaluation are the rule. This is due partly to ambiguous, unstable perception. The disabled person is seen now as good, now as evil; now as able, now as unable; now as childish, now as adult. The consequence of this is that the handicapped person is inevitably unsure of his reception by others and uncertain of the stability of their attitudes.

Uncertainty Regarding Self

Finally, the physically handicapped person is faced with greater uncertainty in building a consistent attitude toward himself. He meets the same difficulties others have in forming a stable, consistent attitude toward him. He receives the same ambiguous stimuli as others do when he views his own physique. He, too, must separate his perception of his imperfect body from the stimuli that reveal his less imperfect person. He is also faced with a conflict between the cultural values concerning physique and those relating to the dignity of the individual. He fluctuates between feeling ashamed when the physical values are high and feeling an inner strength when the human dignity values are most potent. Moreover, in the case of acquired disability, his new body image conflicts with that of his former self. The anguish that can arise from this uncertainty and conflict about the self is effectively described by Katharine Butler Hathaway who suffered from a tubercular infection of the spine and was bedridden throughout her middle childhood *(8)*. She says:

"When I got up at last . . . and had learned to walk again, one day I took a hand glass and went to a long mirror to look at myself, and I went alone. I didn't want anyone . . . to know how I felt when I saw myself for the first time. But there was no noise, no outcry; I didn't scream with rage when I saw myself. I just felt numb. That person in the mirror *couldn't* be me. I felt inside like a healthy, ordinary, lucky person—oh, not like the one in the mirror! Yet when I turned my face to the mirror there were my own eyes looking back, hot with shame . . . when I did not cry or make any sound, it became impossible that I should speak of it to anyone, and the confusion and the panic of my discovery were locked inside me then and there, to be faced alone, for a very long time to come (p. 41).

"Over and over I forgot what I had seen in the mirror. It could not penetrate into the interior of my mind and become an integral part of me. I felt as if it had nothing to do with me; it was only a disguise. But it was not the kind of disguise which is put on voluntarily by the person who wears it, and which is intended to confuse other people as to one's identity. My disguise had been put on me without my consent or knowledge like the ones in fairy tales, and it was I myself who was confused by it, as to my own identity. I looked

in the mirror, and was horror-struck because I did not recognize myself. In the place where I was standing, with that persistent romantic elation in me, as if I were a favored fortunate person to whom everything was possible, I saw a stranger, a little, pitiable, hideous figure, and a face that became, as I stared at it, painful and blushing with shame. It was only a disguise, but it was on me, for life. It was there, it was there, it was real. Every one of those encounters was like a blow on the head. They left me dazed and dumb and senseless every time, until slowly and stubbornly my robust persistent illusion of well-being and of personal beauty spread all through me again, and I forgot the irrelevant reality and was all unprepared and vulnerable again." (pp. 46–47).

We come to the conclusion that, without question, the world of the physically handicapped tends to be less clear and secure than the world of non-handicapped persons and that in consequence the freedom of the handicapped person is more limited. Insecurity is not, of course, peculiar to physically handicapped individuals. An important fact about all men is that they are weak relative to many physical and social forces that surround them. The forces that drive men and those that resist them are strong and greatly restrict men's freedom of action.

Ways of Increasing Security

One way that man has met the problem of coping with uncertainty and thereby increasing his freedom is, paradoxically, by *limiting* his living areas. By restricting his life, largely, to clearings, stockades, buildings, routes of locomotion, and their social analogues, where the forces of the natural world are artificially maintained at levels with which he can cope, man has increased his freedom. A road clearly limits the directions men can go; at the same time it frees them from the too powerful resisting forces of the rough, natural terrain. The same is true of houses, political organizations and social conventions. They are enclaves which limit behavior possibilities, yet free men from overwhelming and unpredictable forces to go more easily in the directions allowed.

The insecurity and limited freedom of the physically disabled person arises from the fact that these protecting enclaves are devised for the nondisabled majority and that what is protective for these people is often not protective for the physically disabled. In some respects the disabled are weaker so that the forces within the clearings are still too strong for them; in other respects they are merely different so that the protection they require is of a different kind from that provided. In these respects the handicapped are like children and old people who are similarly unable to cope with a world fashioned for normal adults. They, too, live in a relatively uncertain, restricted world. Lessons on how to help the handicapped can be learned from our experience with children and the aged. In all of these cases it is essential to try to understand the psychological significance of uncertainty and to

consider what can be done to reduce its negative effects.

When we say that the situation of handicapped persons often lacks the clarity and security of the situation of the physically fit, we mean that handicapped persons cannot see the sequences of action that connect their present positions with new positions they desire to enter. Rather a handicapped person tends to see himself surrounded by a "white" area on his private map where many routes whose directions and destinations are clear bear the signs "impassable" or "probably impassable" and many others are dead-end roads terminating in unsurveyed regions. Continuing the geographical analogy, we can say that the handicapped person lives on a small, familiar homesite surrounded by a large wilderness. In this situation, his behavior will either be sharply restricted to the safe home site or he will become lost in the surrounding wilderness, and filled with anxiety and tension. The degree of anxiety and tension will depend on the importance and extent of the wilderness area.

There are, in principle, two ways of alleviating this situation: (1) to increase the strength of the person to cope with the forces of the wilderness, and (2) to provide special, protective clearings in which forces are tempered to his strength. Common vocational rehabilitation programs operate in both of these ways. Surgical reconstruction, prostheses and special training are examples of the first; special schools for handicapped children, special industrial machines and sheltered workshops are instances of the second. Practical problems center about the best means of promoting an increase in the strength and skill of handicapped persons, of providing the required protection, and of properly balancing these growth-promoting and protective arrangements.

In these respects, problems of dealing with handicapped persons are similar to those of dealing with children where the task of education is to provide a protective situation that will, however, allow the freedom necessary for development. In both education and rehabilitation programs, the experience of success and failure on the part of the individual is a significant indication as to whether there has been an effective balancing of growth promoting and protective arrangements. Indeed, the frequency of the occurrence of the experience of true success is an important test of the effectiveness for the individual of a rehabilitation program, for if a person experiences frequent success, he experiences the self-regard and social approval, mentioned above, that are so important for good adjustment.

Success and Failure

In Western cultures, a requirement of good adjustment appears to be the frequent experiencing of success. Success increases the

values a person attaches to himself, and the values he sees others attaching to him. Careful experimental work has demonstrated that the experience of success is largely independent of actual achievement, but is determined by the goals, expectations and aspirations of the person *(10)*. In general, a person experiences success when he achieves *difficult and important things by his own efforts*. Normally, people set their aspirations near the top of their ability, and as their abilities vary their aspirations change. After success, goals are usually raised and after failure they are usually lowered. In other words, the level of aspiration operates as a protective mechanism so that most people, whatever their abilities, experience success much of the time. But this important governing apparatus, the aspiration level, is sometimes thrown out of gear. There are three common ways in which this occurs:

(1) If aspirations are placed well below the level of a person's highest ability, he will not experience success. He will, in effect, be a deprived, frustrated person because his central needs for self esteem and social appreciation are not satisfied. (2) This is true, also, for the person who places his goals high, but who does not attain them by his own efforts. We have all known children, and adults too, who have been given "everything" yet who are supremely unhappy and often insatiable in their demands for more things, more attention, more experiences. (3) Finally, there are those who regularly place their aspirations above their ability to achieve. They are then regularly confronted with failure and are similarly deprived of self esteem and social satisfaction.

The world of normal adults with its protecting enclaves is so arranged that it is relatively easy to maintain optimal aspirations for desirable adjustment, i.e., for psychological success. Physically handicapped people, however, are peculiarly vulnerable to conditions that disrupt the smooth functioning of the protective level of aspiration mechanism. On the one hand pressures to accept the goals of their associates as their own, goals that are far above their ability to achieve, are very great. In these cases the person experiences repeated failure. On the other hand, the family and friends of disabled persons frequently have a strong tendency to overprotect them from the rigors of the normal world. In so-doing the disabled are often deprived of the possibility of achieving important goals by their own efforts.

Optimal Conditions for Success

It is obvious that the solution of this problem in the individual case will depend upon many unique factors. But the question arises if social psychology can say anything in general about methods of providing optimal living conditions in these respects for the handicapped. The aim is clear: to provide the handicapped

with the opportunity to achieve important and difficult ends by their own efforts. This requires a great variety of circumstances for the great variety of physical conditions of disabled people. And it requires changing circumstances as aspirations change, if success is to continue to be possible.

Most rehabilitation programs recognize these requirements by their emphasis upon individual counseling and by their provision for a great variety of vocational opportunities. It should be recognized, however, that even the most effective diagnostic and placement program is not enough. This can, at best, only place the client in a generally favorable employment situation. The particular goals must be set and the particular means carried out by the handicapped person himself. *This requires that there be flexibility of means and variety of goals within each individual's employment situation.* It is particularly important that opportunities exist in the higher levels of responsibility and reward. One discouraging aspect of the vocational situation of handicapped people is the evidence that they are generally excluded from supervisory and executive positions (*3, 11*). So far as this is true it means that the opportunities for continued success and growth are limited. This serves to emphasize one of the values of self-employment and employment in small enterprises, particularly in enterprises involving numbers of disabled persons. In these cases, aspiration level is likely to be determined more by ability than by the necessary rigidities of a large organization. It is true, of course, that self-employment is limited by the motor restrictions of many handicapped people. None-the-less it would appear, in view of the basically favorable conditions provided by self employment, that more consideration might profitably be given to special physical, organizational and financial arrangements for the self-employment of handicapped individuals and groups. However, every effort should be made to provide opportunity for higher level jobs for the handicapped in large industry. It must always be kept in mind that a job is not enough; only employment that presents the individual with an endless frontier of opportunities to achieve the basic satisfactions of self esteem and social status is, in the end, sufficient.

However, it must be recognized that vocational achievement is by no means the only basis of success. Innumerable persons lead satisfied lives with low vocational accomplishments via non-vocational activities, in family, lodge, church and union, for example. Unfortunately here, too, the freedom of the handicapped is likely to be more limited than that of the non-handicapped. The meager evidence available suggests that marriage is less frequent for disabled persons and that they more

often than others experience social isolation (*1*). The opportunities for successful achievement by the handicapped, as by the non-handicapped, are often through participation in group activities: the missionary efforts of one's church and the victory of one's political party.

Much might be done to help disabled persons establish themselves in situations where restrictions on group activities are minimal. Without question, one paramount restriction existing for many is difficulty of physical locomotion. Here, the tremendous barriers occurring in cities are especially obvious. Another important restriction on free participation in groups is the social resistance many handicapped receive from others—particularly from strangers. Both of these restrictions on easy access to groups appear to be minimal in small communities where the distances are short, the parking problems non-existent, groups small and strangers rare. Small town life has long been recognized as having advantages for children by providing greater freedom and security than cities. The same advantages may hold for many physically handicapped people. At any rate, the problem of community situations that provide greatest freedom for participation and achievement by different classes of handicapped persons is worthy of serious study. Here is an aspect of the rehabilitation problem that has been almost totally neglected.

SUMMARY

We have discussed two important characteristics of the social psychological situation of many physically handicapped persons that are of relevance to individual adjustment, namely devaluation and insecurity. Devaluation of the handicapped is a widespread social fact that arises from the values the culture places on normal physique and from the pressures upon the normal majority to maintain these values. However, it has been pointed out that worker-client relationships can diminish the maladjustive tendency of the disabled person to devalue himself by encouraging him to participate actively in the rehabilitation process and to face the full reality of his handicap. Suggestions are given as to how the worker-client relationship can help the disabled person to change his perception of his disability from a calamity involving him as a person to a condition of life which, although often serious, need not affect his worth as a person. Thus seen, disability becomes a problem to be solved or an inconvenient fact of life to be accepted.

The disabled person tends to be relatively uncertain of his ability to cope with the physical world, of his acceptability in the social world, and of his value as a person. These give rise to disturbing feelings of insecurity. Overcoming insecurity feelings

in the disabled person is helped by strengthening his resources so that he can cope with the new and the unknown, and by protecting him from situations which are too threatening. A proper balancing of these growth promoting and protecting conditions is revealed by the success and failure experiences of the disabled person. The opportunity to achieve important and difficult ends by his own efforts is the basis of his experience of success. When this occurs, the adjustive feelings of self esteem and social appreciation are fostered. The aim of vocational rehabilitation programs in so far as they seek to promote personal adjustment should be to provide conditions for the optimal success of disabled persons.

REFERENCES

1. Barker, Roger G., Wright, Beatrice A. and Gonick, Mollie R: *Adjustment to Physical Handicap and Illness: A Survey of the Social Psychology of Physique and Disability.* Bulletin 55. New York: Social Science Research Council, 1946.
2. Barker, Roger G.: *The Social Psychology of Physical Disability.* Journal of Social Issues, 1948, *4*, 28-35.
3. Brighouse, Gilbert.: *The Physically Handicapped Worker in Industry.* Bulletin 13. Pasadena, Calif.: California Institute of Technology, 1946.
4. Chicago Sun-Times, September 4, 1951, p. 30.
5. Dembo, Tamara, Ladieu, Gloria, Wright, Beatrice A.: *Adjustment to Misfortune: A Study in Social and Emotional Relationships Between Injured and Noninjured People.* Final Report to the Office of the Surgeon General, 1948. MS.
6. Goldman, Raymond Leslie.: *Even the Night.* New York: Macmillan, 1947.
7. Habbe, S.: *Personality Adjustments of Adolescent Boys with Impaired Hearing.* Thesis. New York: Teachers College, Columbia University, 1936.
8. Hathaway, Katharine Butler.: *The Little Locksmith.* New York: Coward-McCann, 1942.
9. Ladieu, Gloria, Hanfmann, Eugenia, Dembo, Tamara: *Studies in Adjustment to Visible Injuries; Evaluations of Help by the Injured.* Journal of Abnormal and Social Psychology, 1947, 42, 169-192.
10. Lewin, Kurt, Dembo, Tamara, Festinger, Leon, Sears, Pauline: *Level of Aspiration. (in) Personality and the Behavior Disorders,* J. M. Hunt (ed.) New York: Ronald Press, 1944.
11. Noland, E. W., Bakke, E. W.: *Workers Wanted. A Study of Employers Hiring Policies, Preferences and Practices in New Haven and Charlotte.* New York: Harper and Bros., 1949.
12. White, Ralph K., Wright, Beatrice A., Dembo, Tamara: *Studies of Adjustment to Visible Injuries: Evaluation of Curiosity in the Injured.* Journal of Abnormal and Social Psychology, 1948, 43, 13-28.

PSYCHOLOGICAL PROBLEMS OF POLIOMYELITIS

Morton A. Seidenfeld

According to Dublin, poliomyelitis accounts for 5 percent of the disabled males and 10 percent of the disabled females in this country. It is the leading cause of orthopedic impairment among children under the age of 21 (with a prevalence rate of 13.9 per 10,000) (*4*).

A disease with such an incidence of disabling effect is one of major concern to those interested in vocational rehabilitation. Many of the difficulties which the poliomyelitic with residual paralysis must face are the result of physical limitation. It appears altogether likely, however, that frequently these difficulties are centered about the psychological adaptation of the disabled individual, and those who are in the innermost circle of his life, to the results of his disability.

It is necessary that some understanding of this disease, its cause, its effects and the ultimate outlook for its control, be attained so that we may more fully appreciate the impact of poliomyelitis upon those who are its victims.

POLIOMYELITIS THE DISEASE

Poliomyelitis, or infantile paralysis, has been known since ancient times. This is evidenced in the ancient friezes which depict individuals with bodies that have been deformed by atrophy of muscles and by the excessive stresses and strains placed upon the bony structure as the result of loss of balance between antagonistic muscle groups following the disturbance of the neuromuscular mechanism.

Formal recognition of the disease was given in the literature by Underwood (*21*) more than 160 years ago, though he did not name the disease but rather described it as a paralysis following on the heels of a debilitating illness. The first systematic description of the disease was made in 1840 by Heine. More than fifty years elapsed before a description of an epidemic was reported. Since that time a very large literature on the epidemiology, virology, pathology, care and treatment of poliomyelitis has developed (*10*).

The cause of poliomyelitis in man is a virus so small in size that it cannot be seen by even the most powerful of ordinary miscro-

scopes, but can be detected by the use of the electron microscope. There are three recognized strains (Lansing, Brunhilde and Leon). Each of these strains has its own characteristics and immunity which may result from exposure to one strain may not confer immunity to the other two types.

Considerable advances made in the typing, the methods of propagating the virus *in vitro*, in epidemiological study and our knowledge of the behavior of the virus in a variety of geographic areas are but a few of the investigative results which lead us to look with considerable optimism upon the ultimate conquest of this disabling malady. An excellent review of these advances may be found in Paul's recent summary (*15*).

In the meantime, while we are hopefully awaiting the eradication of this disease, we are still faced with the problems it creates each time it succeeds in gaining a sufficiently strong foothold in the body of a child and adult to be clinically recognized. It is difficult to know how many individuals have had poliomyelitis in such a mild form that, clinically, it was never identified or even suspected of having occurred. Undoubtedly, many individuals have experienced the prodromal symptoms (that are so commonly identified with many infectious processes) of a headache, a mild pain in the neck or back, moderate fever, a running nose and perhaps nothing more. In a day or two they have completely recovered and viewed the entire experience as a "cold" or "la grippe."

Doubtless some of these individuals have experienced a subclinical poliomyelitis which has done nothing more than make it possible for their bodies to develop some immunity to the particular strain of virus which they harbored.

Others who have not been so fortunate as to develop this immunity, or do not have the capacity within them to overcome massive doses or the virulence of the agent, or may have developed it to a particular virus type but when later exposed to one for which no such protection exists within their body, will come down with what will be clinically identified as polio.

Those who do develop the disease will, for the most part, likely be children. About 75 percent of those reported annually as having polio are between 1 and 15 years of age. The remainder are usually in an age group from 16 to 40. Infants are not infrequently known to have the disease and individuals well into the fourth decade are reported in practically all epidemic areas.

When the disease does occur its more common acute symtomatology includes sore throat, nausea and vomiting, headache, fever and drowsiness. While these symptoms are non-specific, when they are associated with contact with known poliomyelitics or

when they occur during the "polio season" they provide a warning for close observation and precautionary procedures designed to protect the patient. On clinical examination the trained clinician can often elicit other more specific signs, especially those revealing stiffness of back and neck which, when present, give increased support to the tentative diagnosis. This may be further amplified by spinal fluid studies and other clinical findings.

Before long, pain associated with movement of the body occurs and, still later, paresis or paralysis of voluntary muscles may take place. Usually several days elapse before the clearly defined paralysis of muscle groups which are going to be involved takes place.

This is a very brief description of the more or less typical "spinal" polio. Other individuals will be found to have more involvement of their upper extremities, the muscles of respiration, the muscles of swallowing and speech. They have the "bulbo-spinal" type of polio and the involvement is centered maximally in the motor neurons of the upper portions of the cervical cord and extending up to the bulbar portions of the brain. When such involvement occurs, the muscles of the chest, the diaphragm, the shoulders, arms, and hands are affected. Many of these patients become the "respirator" inhabitants during a portion of their illness.

A third and smaller group have "bulbar" polio. They are characterized by having the maximum involvement of the "higher centers," or the vital centers of the brain, plus the 7th, 10th and 12th cranial nerves and some involvement of the meninges. Obviously these are the most severely involved patients and the mortality of polio is to be accounted for as deriving mainly from this group and the "bulbo-spinal" type.

From the standpoint of the vocational rehabilitationist, most of the patients requiring help in adjusting to their disability and in fitting themselves for a psycho-social-vocational future will come from among those who have suffered a residual paralysis and will of necessity derive mostly from the spinal and bulbo-spinal group. Oftentimes the bulbar patient who survives his illness will recover without any obvious physical disability although when a frank polioencephalitis has occurred, considerable alteration in mood and even in intellectual capacity may occur.

It may be helpful to say a word here about the pathological process which occurs when the polio virus enters the body of the susceptible individual. While we are not certain that the only portal of entry for the virus is the mouth, one may be reasonably sure that this is a highly important one. Having gotten into the mouth, the virus makes its way to the central nervous system.

Once there, it seems to have something of a fastidious preference for the anterior horn cells of the cord. Being a parasite, once it gets within the cell it begins to enjoy the fruit of its labors and to subsist on the food furnished by the host cell. Fortunately, in many instances, the host is able to resist this parasite and ultimately vanquish the invader. In the interim, however, both the anterior horn cells that are unable to halt the parasitic destruction and those that will succeed ultimately in vanquishing the invader will, for a period of time, fail to function. While this is occurring, the stimuli for movement carried by these neurons will be unable to be transported. Those cells which are ultimately destroyed are, of course, permanently lost and are not going to be functionally useful again, while those neurons able to overcome the viruses will, in time, again resume their function and once more enervate the muscle groups concerned. Unfortunately it is not possible to be clinically certain how many of the involved neurons are going to recover and what their rate of recovery will be. This is often a source of worry and distress to the patient and his family. Often it is a complication in planning the orientation of the patient for such training as may be required to effect a good social and vocational adjustment.

Complicated as the recovery process may be from a neurological or orthopedic point of view, there is no doubt that the rehabilitationist responsible for the patient's psycho-social-vocational plan has one great advantage. This lies in the fact that regardless of what the total recovery of function may finally be, the patient and the vocational rehabilitationist must first make use of the functions that are either potentially undamaged or damaged to a minimal extent. Beginning with existing assets the patient may find that time will see the return of many additional capacities. These additions will provide opportunity for increased satisfaction and functional attainment and should not complicate a well-organized and properly designed training program. At the same time, any failure to attain such additional increases in function will discourage the patient to a lesser extent if he has already begun his new life plan without depending on the vagaries of his neuromuscular recovery.

PSYCHOLOGICAL FACTORS IN POLIOMYELITIS

Having presented at least a superficial orientation about the nature of poliomyelitis, we may now turn our attention to the psychological factors which are involved when the disease has resulted in permanent disability.

We should recognize at once that we must concern ourselves with four basic problems: (a) the psychological characteristics of the patient before onset of his illness and disability; (b) the

psychological effects arising directly from the disease process; (c) psychological alterations arising from the reaction of the patient to his disability; and (d) psychological reactions derived from the attitudes and behavior of others toward him.

The psychological characteristics of the patient before the onset of his illness and disability

Commonly we are inclined to attribute behavior characteristics to circumstances which appear to be more or less obvious. Thus we frequently attribute good and bad qualities found in a disabled person to his disability. Many individuals look upon Franklin Delano Roosevelt as having attained much of his greatness out of his poliomyelitis. They think of Beethoven's musical genius and his deafness as closely associated. Or they think of the villain in the movie as being what he is because of his "game leg" or his misshapen back coming out of a Potts' Disease.

If we stop to think about this seriously we must recognize that regardless of the impact of a disability upon an individual's personality, it is necessary to recognize the importance of his inherited characteristics and, except for congenital disability, his experience prior to the onset of his disabling illness or accident. It is extremely unlikely that an accident or a disease resulting in physical alteration of the individual will completely wipe out the role of nature and nurture.

Therefore, before one can say with assurance that the poliomyelitic is the way he is because of polio, a very careful exploration of his pre-illness psycho-social-vocational history must be made. The patient who has done poorly in school, has been maladjusted in home and community relationships, or has failed to establish a sense of personal worth, self-assurance and security before the onset of polio, is not likely to experience improvement of a lasting sort as the result of his disability unless it has provided him with a completely new and greatly improved environment. Nor, on the other hand, is he likely to become vicious, cruel, aggressive or shy and retiring unless he possessed characteristics of behavior of a similar sort, perhaps on a less obvious basis, before the onset of his disability.

To the vocational rehabilitationist then, it is of the utmost importance that plans for the future of the patient be carefully evaluated in terms of the patient's past history. Full recognition should be given the established record of the patient to tolerate frustration, to maintain his courage and keep "plugging," his intellectual capacity as demonstrated by his academic and vocational success, his social adjustment, and the entire gamut of personality factors that he demonstrated *before he became ill.*

The failure to recognize the importance of the past in planning for the future may result in complete failure in the newly estab-

lished vocational plan which could have been predicted far in advance. Recognition of the importance of this factor, on the other hand, will prevent the shunting of the patient into areas in which he can have little hope of success and in which the experience of a further failure would merely serve to decrease the hope for ultimate successful adjustment.

The psychological effects arising directly from the disease process

In poliomyelitis we must be aware of the possibility of psychological effects arising directly from the invasion of elements of the central nervous system by the virus. As long as the virus confines its action principally to lower motor neurons or anterior horn cells of the cord, it is likely to have very little demonstrable effect upon behavior except as it is revealed in the alteration of bodily movement. In some cases, however, especially in bulbar polio, we know that an inflammation of the brain may occur (polioencephalitis) and when this happens there is likely to be some organic brain damage with resulting alteration in mental function. Generally this is revealed as a change in irritability, altered capacity to concentrate and attend to what is going on, and even possible changes in mental capacity. Furthermore, in bulbo-spinal and bulbar polio, alteration in respiration, in CO_2–O_2 balance may result in oxygen deprivation of the brain with similar behavioral changes.

Fortunately, this type of event occurs rather rarely and in most instances behavior changes are less severe and readily explained on a pure environmental basis which will be discussed later.

To the rehabilitationist this is a matter of consequence since, for the most part, you may be able to anticipate minimal behavioral change resulting *directly* from the disease. You need, however, to recognize the possibility of such changes especially in the more severe poliomyelitic disability with a known history of high fever, oxygen deprivation, and extensive involvement of the cranial nerves and the brain.

Psychological alterations in behavior arising from the patient's attitudes toward his disability

In spite of the fact that in most instances we can anticipate that polio is *not going to make any organic change* in the patient, nevertheless we may be equally sure that some changes are going to take place in his behavior.

To some degree these will derive directly from the attitudes which the patient feels toward disability. It will depend upon: (1) The amount of fear he has experienced about his illness; (2) his pre-illness attitudes toward disability in general; (3) the amount of accurately and clearly oriented information he has about the effect the disease will have upon his future; (4) the

kind of experiences he has had with his loved ones and his community relative to his disability; and (5) on what he believes he possesses in the way of trainability to attain independence of action, self-reliance and security.

Let us consider these points one by one. First, the amount of fear the patient has experienced about his illness will, of course, be subject to variation, but in nearly all instances we feel quite certain that some fears do exist. These fears will be centered around their own interpretation of the limitations which polio will bring in its wake. They will be amplified by their opinions of society's attitude toward the disabled which in turn is further modified by their own pre-disability reaction to those who are disabled, as discussed later.

These fears are based primarily upon the threat to the ego which occurs when one is not able to consider himself as a "perfect" physical specimen, and in the competitive sphere where the individual is embarrassed by being unable to attain goals which formerly he could, or thought he could, successfully accomplish.

This leads us to the second major source of fear—the pre-illness attitude of the individual toward disability. Most of us have prejudices and biases of one sort or another, even though we may deny their existence. These develop out of our need to feel superior, to feel successful, and to make certain that there are others who cannot "beat us out" in the competitions of life. These attitudes are so commonplace that we do not even bother to explain them—and as a matter of fact they really constitute one aspect of the law of self-preservation. So, in all of us there is a tendency to seek out individuals who have readily identified characteristics which we can use to label those who are considered to be *less adequate because of this trait or characteristic.* Obviously, physical disability readily lends itself to such behavior and, as a result, many report that "we can't stand to be with a handicapped person" or "physically disabled individuals are poor industrial risks," or the wide variety of pat phrases which are so often implied or spoken in our attitudes toward the physically limited.

Other individuals prefer to feel that the disabled are being punished for some actions in the past, or "for the sins of their fathers." And still others try to hide these feelings by over-attention, overkindness and maudlin sympathy.

Since some degree of such attitudinal state exists in nearly all of us, it is hardly surprising that with the advent of disability an individual may find himself "hoist on his own petard" and the victim of self-condemnation. These reactions are not easy to overcome because the individual has lived with them so long and has

applied them to so many others he cannot readily abandon them when he would like to do so for his own comfort.

The third factor in inducing fear is the influence of his own knowledge about his disability. Frequently the individual is completely at a loss to appraise the extent, the duration, or the ultimate effect of his physical state. He often over-estimates his limitations, forgetting completely the capacities he has not used or developed to their full extent. Sometimes he underestimates his limitations and demands of his body more than it could be expected to do even if the disability were not present. Lack of proper orientation, inadequate or inaccurate appraisal of his capacities lead him to fears that are often groundless and unnecessary.

A fourth factor that may produce fear in these individuals is the reaction of his family and others, and even the community at large, toward the disability. If he has received love, understanding and tactful help in meeting his problem and if he finds he is judged competitively in his community, but with emphasis upon *what he can do* rather than upon what he cannot do, his fears will tend to be minimized. If the reverse is the situation, as is all too often the case, then his fears often rise to serious proportions.

A fifth and final factor in the evolution of the patient's fears is to be found in what he believes he possesses among his assets that can be trained and developed to give him self-assurance, security and personal independence of action. Without these things life becomes a continual threat and is devoid of the essential satisfactions. If he can be given the assurance or even the hope that with work and effort he will attain a self-sustaining role in life, his fears are likely to be reduced to a level with which he can cope successfully.

It would be surprising indeed if out of these many sources of fear and anxiety within the individual there were not behavioral changes. Suspicion, apprehensiveness, uncertainty are all concomitants of anxiety and we frequently find them in the behavioral spectrum of the disabled. The reduction or elimination of the sources of such fears will do much to prevent maladaptation as a permanent sequela.

Psychological reactions derived from the attitudes and behavior of others toward the disabled person

Mention has already been made of the effect upon the individual of the attitudes of those in family and social milieu. This is a very important factor not only in the production of fears but also on the total reaction of the person to his environment.

It is rather an amazing thing that our attitudes as a society have not greatly changed from ancient times to the present day, from primitive societies right up to our most complicated modern complex social structure.

If we are to deal realistically with the problems of disabled men and women, it is essential that we understand that most of us really do not like to be "different." In spite of our clamoring for *rugged individualism* we really mean that we want to be different from our fellowman only insofar as this does not make us stick out like the proverbial "sore thumb." If we are excessively intelligent we run the risk of being called a "genius" with one breath and a "screwball" with the next. If we are outstanding in graphic art or music someone is sure to praise us and then turn around and call us "queer," "eccentric" or "peculiar" or say "Oh, you know how artists are."

So it is with the social attitude toward the disabled. A poliomyelitic with a paralyzed arm or leg, or a combination of both, is likely to find that he has become an easy target for discrimination and avoidance because he has been made so readily recognizable as different from his fellowmen.

There are those who feel that these social attitudes could be overcome. They believe a properly applied educational process could make society forget these differences and accept the individual for what he is. Perhaps this is so. Whether it is or not, there is no harm in continuing the efforts to at least improve the understanding and acceptance of the disabled. However, all must agree that the existing attitudes are of long standing and are difficult to eradicate. Therefore, a great deal of effort must, for the time being at least, be directed toward more adequately equipping the disabled to accept realistically the existence of such attitudes and developing an ability to tolerate them. If one can stop fretting over the existence of such attitudes, recognize the importance of developing their potentialities to the optimal level and then compete with his fellowman, fully prepared to "let the best man win" while making sure he is the "best man," there is a much better chance of successfully overcoming their limitations than by waiting for society to improve its attitudes.

The importance of society's attitude toward the poliomyelitic is perhaps doubly important since often his disability occurs when he is very young. The acceptance or rejection of the polio child by his parents, teachers, and playmates, in and out of school, is going to play a very sizeable part in his ultimate adjustment.

RESEARCHES AND STUDIES ON PSYCHOLOGICAL ASPECTS OF POLIOMYELITIS

Since poliomyelitis is principally a disease of children, many of the studies that have been made deal with individuals who are younger than those coming under the immediate consideration of the Office of Vocational Rehabilitation. With the passing of time, however, some will become clients of this service. A knowledge of

212229°—52——4

the events that occur during these formative years may lead to better understanding of their problems in later life.

In 1930 the first report on a "moral perversion," probably a psychological disturbance in a child as a sequela of poliomyelitis, was made by Van Bogaert *(22)*. About the same time Newell *(14)* discussed two surviving children of a set of triplets, one of whom developed polio with residuals at the age of two, while the other had no apparent residuals. It was obvious from this study that the presence of residuals, rather than the exposure to polio, created the psychological problems of the patient. Furthermore, the rejection of the disabled child by the parents further extended the maladaptative process.

The necessity for supplying young patients with guidance in adjusting to their prolonged convalescent period and the equally important obligation of orienting the parents of these patients not only to the physiological problems but those of psychological consequence as well, was recognized by Griffin, Hawke and Barraclough as early as 1938 *(9)*.

A number of investigators have reported upon the effect of poliomyelitis upon the intelligence and intellectual status of the individual. Gordon, et al., *(8)* found that the disease did not ordinarily alter the I. Q. on the Stanford-Binet Intelligence Scale although prolonged school absence and the behavioral changes attendant upon hospitalization for long periods frequently resulted in emotional disturbance which interfered with their educational pursuits after creating a pseudo-mental retardation. Bronson Crothers and Edith Meyer *(3)*, studying children with and without frank cerebral involvement, found that when brain involvement was present there was evidence of alteration in visual-motor capacity and the comprehension of spatial relationships. In addition, impairment in learning, ability to sustain effort and attention, as well as increased irritability were often noted. Where spinal involvement without significant clinical evidence of cerebral trauma was present, similar but much milder results occurred which were explainable in terms of interference with the child's normal development in a normal environment. The lack of opportunity for activity, socialization and for securing the warmth of parental affection are considered fundamental factors in producing such behavior when polioencephalitis has not been clinically demonstrable. Obviously the presence of a frank polioencephalitis will produce organic difficulties that retard learning and create altered personality structure *(13)*.

In a more recent study by Phillips, Berman and Hanson *(16)* in which environmental factors were inadequately controlled, although age, sex, intelligence, school grade, socio-economic status

were controlled by paired-comparison with nonpolio children who had not been hospitalized, they found very small but statistically significant variance in Stanford-Binet I. Q's. The clinical significance of these findings appears to be less real than appears superficially, as pointed out by Barker *(1)*.

So far as personality changes, work capacity and social adjustment are concerned, a number of interesting observations have been made. Mary Gates *(7)* found no significant differences between disabled and non-disabled adolescent boys and girls on a large battery of psychological tests. She did secure evidence from interview and autobiographical data that cultural and social relationships within the family constellation influence adjustment to a greater degree than the presence of a disability.

Some years before Gates' study, Winkler *(24)* reported a tendency to withdrawal, over-aggressiveness, and feelings of inferiority in disabled children contrasted with those who were apparently normal. The more extensive studies of Lowman *(11)*, Lowman and Seidenfeld *(12)*, Seidenfeld *(18)* and, most recently, the follow-up study by Wendland *(23)* have thrown light on the adjustment of the post-poliomyelitic. These combined studies on a large group of patients who had been followed over a decade, indicate that when the patient is oriented toward making use of his capacities and emphasizing his physical and mental assets rather than the liabilities associated with his disability, he is likely to develop along essentially normal paths. His socio-economic-vocational adaptation will be influenced favorably when interference factors associated with the disability are minimized by early recognition of their effect on the job; by proper selection of vocations that have the least likelihood of calling for capacities in which such interference is commonly associated, and by adequate supervision and check-up of the disabled individual to avoid frustrations associated with such work interference. Long time follow-up clearly emphasizes that the severely disabled are in the majority of instances quite capable of leading a fully satisfying life, earning incomes comparable to non-disabled, and enjoying good social adjustment even though their frustrations are more frequent and greater in amount and extent than those experienced by the physically able-bodied.

Behavior problems in children with polio are frequently associated with parental reactions with tendencies toward over-indulgence often followed by over-severity and inconsistency *(17)*. Some have noted that the frustrations resulting from their disability often produce irritability, crying, bewilderment and withdrawal *(2)*. And still others have reported on the inaccuracy of the appraisals of these children which tend to emphasize their desire to conform and be like all children, yet actually fail to tap

their inner feelings *(19)*. Fielding's recent study on adult women seems to indicate that *acceptance* of the disability leads to the most satisfactory adjustment of the individual *(5)*.

There are still many untapped areas of research on the psychological aspects of poliomyelitis. Recently the needs in this area have been reviewed *(20)*. Particularly important is our need for extending our knowledge regarding the effects of respiratory interference and threats to respiration which occur in patients with bulbar and bulbo-spinal polio. The effect of alteration in the blood-gas balance, in brain metabolism and the traumatic effects on the personality of the impeded airway are in need of very serious study. Problems associated with the "weaning" of the patient from mechanical aid to respiration are just beginning to be closely scrutinized and it is hoped that better preparation of the patient for life will be evolved from the findings. The development of the rocking bed and its use in the weaning of the patient from the bellows-type respirator is just one example of the mechanical advances. Now there is the need for improved psychological approaches to solving the psycho-social aspects which form the other facts of this problem.

REFERENCES

1. Barker, Roger G.: *Child Psychology*, Chap. I, pp. 1-22. In Stone, Calvin and Taylor, Donald W. (Ed.) *Annual Review of Psychology*, Vol. 2, 1951, Stanford University Press.
2. Copellman, Fay S.: *Follow-up of 100 children with poliomyelitis.* Family, 1944, 25, 289–297.
3. Crothers, Bronson and Myer, Edith.: *The psychologic and psychiatric implications of poliomyelitis.* J. of Pediat. 1946, 28, 324–326.
4. Dublin, Louis I.: *The facts of life from birth to death.* New York: The Macmillan Co., 1951.
5. Fielding, Benjamin B.: *Attitude and Aspects of Adjustment of the Orthopedically Handicapped Woman.* Doctoral dissertation. Advanced School of Education, Teachers College, Columbia Univ., 1950. (Unpublished)
6. Fishbein, Morris and Solmansen, E. M.: *A bibliography of infantile paralysis, 1789-1949.* Philadelphia: J. B. Lippincott, 1951.
7. Gates, Mary: *A Comparative Study of Some Problems of Social-Emotional Adjustment of Crippled and Noncrippled Girls and Boys.* Thesis. Univ. of Wisc., 1942.
8. Gordon, R. G., Roberts, J. A. F. and Griffiths, R.: *Does Poliomyelitis Affect Intellectual Capacity?* Brit. Med. J. 1939, 2:803–805.
9. Griffin, J. D. M., Hawke, W. A. and Barraclough, W. W.: *Mental Hygiene in an Orthopedic Hospital.* J. Pediat. 1938, 13, 75.
10. Howe, Howard A.: *Poliomyelitis.* In Rivers, Thomas M. (Ed.) *Viral and Rickettsial Infections of Man,* Philadelphia: J. B. Lippincott Co. 1948, 245–268.
11. Lowman, C. L.: *Survey of the Vocational, Educational and Social Status of Poliomyelitis Patients Conducted for the National Foundation for Infantile Paralysis.* Mss. 1942.

12. Lowman, C. L. and Seidenfeld, M. A.: *A Preliminary Report of the Psychosocial Effects of Poliomyelitis.* J. Consult. Psychol. 1947, 11, 30–37.
13. Meyer, Edith and Simmel, Marianne: *The Psychological Appraisal of Children With Neurological Defects.* J. Abn. and Soc. Psychol. 1947, 42, 193–205.
14. Newell, H. M.: *Differences in the Personalities of the Surviving Pair of a Set of Identical Triplets.* Am. J. Orthopsychiat. 1930, 1, 61–80.
15. Paul, John R.: *A Summary of Current Knowledge and Trends in Poliomyelitis.* The Merck Report, 1952, 61, 3–8.
16. Phillips, E. Lakin, Berman, Isabel and Hanson, Harold B.: *Intelligence and Personality Factors Associated With Poliomyelitis Among School-age Children.* Soc. for Res. in Child Development. Monog. #45, 1947, 12.
17. Rosenbaum, S. Z.: *Infantile Paralysis as the Source of Emotional Problems in Children.* Welfare Bull. 1943, 34, 11–13.
18. Seidenfeld, M. A.: *Psychological Elements in Work Interference From Physical Disability.* J. Consult. Psychol. 1947, 6, 326–333.
19. Seidenfeld, M. A.: *Psychological Sequelae of Poliomyelitis in Children. The Nervous Child,* 1948, 7, 14–28.
20. Seidenfeld, M. A.: *Problems in Psychological Research in Poliomyelitis. Acta Psychologica,* Amsterdam, 1951, 8, 194–200.
21. Underwood, M.: *A Treatise on the Diseases of Children.* Vol. 2. Disability of the lower extremities, pp. 53–57. London: Printed for J. Mathews, 1789, 2nd Ed. In Fishbein, Morris and Solmansen, E. M.: *A bibliography of infantile paralysis, 1789–1949.* Philadelphia: J. B. Lippincott, 1951.
22. Van Bogaert, L.: *Perversion Morale Chez l'Enfant a la Suite d'une Infection Vraisemblablement Polomyelitique.* (Moral perversion in the child following a probable poliomyelitis infection.) *J. de Neurol, et de Psychiat.* 1930, 30, 579.
23. Wendland, L. V.: *Some Psychological Aspects of Poliomyelitis.* Dissertation. Graduate School, Univ. of So. Calif. (Unpublished)
24. Winkler, H.: *Psychische Entwicklung und Kruppeltum.* Leipzig: Leopold Voss, 1931. In Barker, Roger G., Wright, Beatrice A. and Gonick, Mollie R. *Adjustment to Physical Handicap.* New York: Social Science Council Bull. 59, 1946.

PARAPLEGIA

Stanley Berger

One of the most difficult problems in rehabilitation, from both a physical and psychological aspect, is paraplegia. The severity of the paralysis quite incapacitates those areas involved, yet leaves relatively untouched the remainder of the body. Thus there is produced the anomaly of having so much good to work with in these patients on one hand, and such a crippling disability on the other. It has been only through the untiring efforts of the workers in the field of rehabilitation that successful results are now being realized.

MEDICAL ORIENTATION [1]

Paralysis of both lower limbs is spoken of as *paraplegia.* More or less of the trunk may also be involved in the paralysis, and in some cases sensation in these parts is affected. The paralysis is caused by damage to the spinal cord, and this damage may be the result of a gunshot wound, a fracture-dislocation of the spine, acute inflammation such as transverse myelitis, or a disease of the nervous system such as anterior poliomyelitis, to mention a few of the many conditions which may produce the nervous lesion. The type of paralysis may vary in nature, and in degree, the specific disability depending upon the site and extent of the pathology in the nervous system. This aspect of the paraplegia is extremely important in considering the rehabilitative program for the patient, both from a psychological and vocational viewpoint.

There may be a complete division of the spinal cord at one level, or there may be only partial destruction of the cord, or the pathological process may be limited to the anterior motor cells as in poliomyelitis, or may affect the longitudinal motor pathways in the central nervous system. Following a complete transverse division, such as may occur in a fracture-dislocation from a diving accident, there develops a stage of spinal shock immediately. In this there is complete loss of visceral and somatic sensation, and the skeletal muscles below the level of the lesion are quite toneless (flaccid paralysis). At this time there is also retention of urine and feces due to tonic contraction of the sphincters. This spinal

[1] The author gratefully acknowledges the assistance of Ian Alger, M.D., in the preparation of the medical aspects of paraplegia.

shock lasts in man from one to three weeks. This stage passes into one where the reflexes become active, and the flaccid muscles become spastic as the basic reflex arcs of the spinal cord are established without the mediating impulses from higher centers. The retention of urine, so complete at first, now gives way to the extent that the bladder automatically empties itself when the pressure within it rises to a certain level.

In the above description reference was made to the spinal reflex arcs. These basic reflex arcs are interrupted in a disease such as poliomyelitis, and it is for this reason that the paralysis in this disease is of a permanent flaccid nature, and there is wasting (atrophy) of the affected muscles.

So much then for the types of paralysis, which may be flaccid (toneless), or spastic (in tonic contraction) depending on the elements of the nervous system which are damaged. In addition to the types of paralysis, the degree of paralysis must also be considered, and this depends on the site, and extent of the damage. If only certain nerve pathways are interrupted, as may occur in a partial division of the cord, or in the spotty selection of nerve cells in poliomyeltis, some muscles may be spared altogether, while others may only be weakened (paresis). These are the muscles that are given special attention in what is called muscle-reeducation. Every healthy muscle fibre that remains is trained and developed to the greatest possible extent by this means.

As mentioned, the site of the injury to the spinal cord is also of major importance. If the transverse lesion is at the fifth segment in the neck region, all four limbs of the patient are paralyzed (quadraplegia). When the level is this high, the patient breathes by his diaphragm alone, and may not survive. In some cases, however, and especially when the lesion is slightly lower, the patient survives, but is markedly restricted so that problems in rehabilitation are serious, and vocational possibilities are limited. The goal for many of these patients must be set at self-care, and "activities of daily living," and some may always need the assistance of another person.

At this point a long discussion concerning the treatment and prognosis could be undertaken, but since these aspects vary so greatly from case to case, and are affected both by the nature of the process which produced the paraplegia, and by the elements of the nervous system involved, it would seem that such a consideration is not necessary here. Considerable value might be obtained, however, from an understanding of the profound effects bowel and bladder disturbances, and interferences with sexual functioning may have on the total personality, and how these may seriously delay the patient's rehabilitation program. And finally, some

awareness of the physical problems which arise secondary to the paraplegia may prove useful in the development of a more comprehensive and sympathetic understanding of the problems faced by the paraplegic.

The importance assumed by the excretory and sexual functions becomes enormous in terms of the total personality, and the psychological values which the patient places upon them. Difficulties with excretion present a medical problem, but this will be discussed later. The other aspect of this situation, and one which is of tremendous importance in the rehabilitation program, is the social and psychological importance the patient attaches to such activities. This is, of course, equally true where there is a disturbance of sexual functioning. Even when these problems can be handled adequately from the medical point of view, they frequently are the source of profound psychological difficulties which can interfere with, and at times completely interrupt, the whole rehabilitation process.

Finally, let us briefly consider the various medical complications which frequently are found in the paraplegic patient, and which add enormously to his difficulties and suffering. Cases where the lesion is in the region of the cauda equina (nerves from the lowest part of the spinal cord) frequently suffer from intense pain which makes serious consideration of an active program unthinkable to the patient. Chemical and surgical procedures are often necessary in order to alleviate this pain, and to make it possible for the patient to participate in the work of rehabilitation. Another complication may be that of bladder infection, or a more serious kidney infection. With the institution of proper drainage of urine, and with the aid of present-day antibiotics much of the danger can be avoided. Another most serious problem is the tendency of the paraplegic to develop bed-sores (decubitus ulcers). This tendency, combined with the fact that these patients must often be confined to bed for fairly long periods, makes it essential that the greatest nursing precautions are taken for the prevention of these sores, which, once developed, may prove a major source of delay in the program, and may necessitate the performance of plastic surgery.

ATTITUDES IN PAST

The history of the paraplegic patient in rehabilitation actually begins with World War II. Prior to that war little was heard of these patients, most of whom died, usually within a year, of infections of the bladder. There is no central agency to which this type of disability must be reported, though it is estimated that there were approximately 2,400 male paraplegic veterans at the

conclusion of World War II, with an additional 15,000 civilian cases.

In the initial treatment of these cases the acute medical problems were given utmost attention. It soon developed that the overpowering psychological impact was such in the paraplegic disability that psychological and social factors also had to be considered. The inclusion of these factors was somewhat gradual, and, at first, not really recognized as playing the very vital role it does. One of the pioneers in this field drew up a list of nine factors which must be given attention in dealing with paraplegic patients, in which the last factor succinctly states that in caring for patients suffering from a paralysis of the legs resulting from injury to the spinal cord, constantly be on the alert for complicating emotional reactions and help the patient to accept the reality of his difficulty.

PERTINENT RESEARCH STUDIES

One of the early studies, carried out by Hazouri and Mueller dealt with the pain threshold in paraplegic patients; cauda equina lesions. In addition to an evaluation of the pain factor they examined the patients psychometrically, concluding that the relief of pain has a positive bearing on the improvement of personality adjustment. Munro, also working in this area, felt that physical pain was not a major problem, and emphasized the need for educating the public, the patients and their families as to the necessity of training paraplegics for gainful labor.

Talbot, in conducting urological investigations of paraplegic veterans, recognized the important role sexual functioning plays in total rehabilitation. He noted that it was often not the absence of somesthetic, pleasurable sensation that distressed these patients who were impotent as much as it was the accompanying sense of inadequacy. However, Herman feels that the loss of somesthetic stimuli from the genital organs brings about an absence of sexual excitation. Berger, in a psychological evaluation of impotent male paraplegics, found that there was little cessation of sexual drives, though the source of satisfaction often underwent considerable change. Munroe and his co-workers found that traumatic injury of the spinal column does not in itself preclude fertility.

Cooper and his colleagues, working at the Mayo Clinic, report cases in which mammary enlargement and testicular atrophy was observed among young men who had suffered severe injury to the spinal cord. They also observed what they termed a demasculinizing effect accompanying the gynecomastia, and suggest that testosterone proprionate treatment might be of value in such patients.

Emphasizing the psychiatric aspects of cord injury, Nagler reports that factors of embarrassment of excretory incontinence

and the partial or incomplete loss of sexual function are extremely difficult to overcome. Another study concerning the psychological adjustment of the paraplegic patient was undertaken by Thom, Von Salzen and Fromme who report that "despite the fact that they found the paraplegics infantile in their dependence, there were no psychiatric syndromes in the usual sense of the word. Other studies in this area are in essential agreement though such investigators as Mueller, Mosak, and McLaughlin do report the recurrence of certain personality characteristics and attitudes in working with veteran populations.

PSYCHOLOGICAL FACTORS

There has been much discussion over the question of a specific personality structure for a specific physical disability. In other words, does a person paralyzed in the lower extremities and trunk have a "paraplegic personality." This question has been raised in almost every other disability category. There is essentially no one type of personality structure which accompanies a paraplegic disability. We find that the personality of the paraplegic patient is as varied as are personality structures in any normal population. There are as many severely disturbed, as many well-adjusted in both groups. The one factor which is common to all the paraplegic patients is the disability itself.

An interesting and vitally important phenomenon is observed in the psychological mechanism of disabled patients. The physical disability becomes involved in all kinds of psychic activity, both on conscious and unconscious levels. The disability takes on special psychological meaning, which may be surprisingly unlike the physical impairment in reality. This special meaning varies from one patient to another, and depends on the patient's early formative years in which his personality developed. It depends on early experiences within the family, and also upon his parents' attitudes toward disabled people.

In addition, the meaning of the disability depends upon the age of the paraplegic patient. For youngsters a disability may have quite a different meaning than for elderly people. The sex of the patient will also determine the nature of its psychological meaning. Too, the culture or society in which the person grew up is of importance in shaping the nature of this psychological meaning. In short, it is a series of life experiences and early psychic development which play a part in the determination of what a disability psychologically means to the patient.

That the paraplegia has such definite significance for the patient is of extreme importance in trying to deal actively with his psychological problems. We must therefore be able to ascertain what this meaning might be by exploring the conscious and unconscious

personality components. The paraplegia may also be viewed in relation to several areas of psychic life. One aspect of this concept deals with the physical structure of the patient's body. Realistically, the patient has a paralysis of the lower extremities and trunk. We can see this and evaluate it objectively in terms of the limitations and problems it may evoke. We can also predict how a healthy person might react to a paraplegic disability and what upset we expect in his total personality adjustment. However, it has been found that the reactions already witnessed in paraplegics are not in conformity with our objective criteria but much more directly related to their personal psychological view of the paralysis.

It has been observed in physically disabled patients that the same objective degree of impairment may produce decidedly different responses in these people. Some paraplegics may consider their disability on a very objective level, i. e., a paralysis of the lower part of the body. Others may consider the paraplegia as a complete destruction of their entire body, while still others may respond to a paraplegia with almost a complete denial of any bodily disturbance. Each of these reactions must be individually investigated to make a sound psychological explanation of just what has been taking place in the patient. This type of investigation will be discussed below. We shall mainly be concerned here with what these investigations have already indicated.

The concept one has of his own physical structure is referred to as the body-image, and the disabled patient must integrate the paraplegia into his new view of himself. The very early, basic body-image is incorporated into the psychic make-up of an individual during the first few years of life. It depends upon inner impulses from muscles, organs, and skeletal structures in the body. It depends upon the perception one has of his external body. Further, it is also molded by the view others have of this body, and how the person feels others view his body. It is, therefore, a very basic and profound psychic force within the psychological framework of the individual.

It is not surprising to find that the integration of a physical disability into this body-image takes considerable time and psychic energy. In paraplegic patients this integration usually takes place during the first year following the initial onset of the disability. During this phase the paralegic patient clinically appears quite withdrawn and depressed and little interested in making plans for an active return to his community. It appears that so much psychic energy is being drained into this area of reintegration of the body-image that little interest and drive can be maintained for outside activities. It is during this period that it is so difficult

to motivate these patients along vocational and other rehabilitative lines.

In addition to the somewhat broad problems of body-image, certain specific areas of the body and certain bodily functions may assume tremendous psychological importance. How these areas and functions become important is determined by early experiences and training as well as by basic psychological needs. In other words, it appears that these areas and processes are already vulnerable to any outside trauma, and when this occurs in the form of a paraplegia the psychological upset may be overwhelming.

Modern psychology has already indicated how important the excretory processes are for the individual. Many parental attitudes, reflective of the society in which the person lives, are attached to these functions at a very early age, and the adult person may not even be aware of this influence on his present feelings in this area. The necessity for toilet training is markedly impressed upon every child, and failure to comply in this area is met with all sorts of psychological threats and punishments. The errant child is castigated severely by verbal and physical means, and these early experiences produce a lasting effect upon the psychological values he maintains in this area in adulthood. In light of this background we must now try to understand how the paraplegic patient regards his inability to control bowel and bladder functions. Frequently the inability to regulate excretory functions produces in the paraplegic feelings of guilt and shame for behaving on such an infantile and unclean level. All the old parental admonitions come to the fore again, and because so much of this is on an unconscious basis the psychic disruption appears even more insidious in its development. Often the paraplegic patient fears condemnation for this loss of control by other persons with whom he comes in contact because he recognizes that these people have essentially the same strict standards concerning cleanliness in excretory processes as he does himself. This fear of soiling may grow to large proportions so that the patient may be afraid of other people detecting odors eminating from urinals, catheters, rubber pants, or whatever other device is medically prescribed for his use.

Another bodily disruption in paraplegic patients may be witnessed in the development of decubitus ulcers. These sores are a frequent occurrence despite stringent medical precautions. The paraplegic may regard these rather unpleasant looking areas as unhealthy and unwholesome parts of the body, and there may be much emotional upset over their appearance. Because they are often in a state of continual drainage they may also be regarded as further evidence of an unclean body. In addition, these ulcers

present a serious physiological problem which necessitates prompt medical treatment. Even after healing the area must be constantly checked to prevent exacerbation of the condition. This quite naturally places considerable psychic attention upon this area. On a very realistic basis the presence of decubitus ulcers may preclude much physical activity and may actually result in a curtailment of the rehabilitation of the patient.

Another area of extreme importance concerns the parpalegic's ability to perform sexually. There are major problems in this area for male and female patients, and for both this area is heavily psychologically endowed. Here we again see the influence of early relationships with the parents and their attitudes and feelings in this area. The ideas of right and wrong, good and bad, generate from these early contacts with society as represented by the parents, and it is these early-formed concepts which remain as the basis for later feelings and ideas. That this area plays such an important role is indicated by the great lengths to which society goes in its attempts to control sexual expression and the guilt which transgression of these rules can engender.

One of the most significant aspects of this problem is that of impotence in male paraplegics. Society has built up a whole series of concepts and feelings about an impotent male. Such a male becomes the object of much jesting by both men and women. He is certainly considered inadequate for satisfying his role as a man in any sense of the word. He is an unacceptable partner for his wife and unable to become a father. He is even regarded to be impotent in all his other attempts to live a normal and useful life. Now this is the very problem which confronts the impotent paraplegic, superimposed upon the difficulties inherent in the disability itself. Studies have shown that those paraplegic males who are impotent are considerably more depressed, withdrawn, and emotionally overwhelmed than are the potent paraplegics.

In addition, the impotent paraplegics regard their own body as a useless and malfunctioning organism. The feelings of inadequacy are especially reflected in their viewing of the paraplegic disability, and they have marked difficulty in constructively dealing with the problems of readjustment in a normal home community. Many of these patients experience a dreadful apprehension at the thought of having to return home to their wives and family.

Some of these patients make much better relationships with paraplegic females than with non-disabled women. The demand upon their adequacy as a masculine sex-partner is greatly reduced in this kind of attachment. There are some cases where the male paraplegic unconsciously gains psychological benefits by the

resulting impotence in that it may help him avoid experiences which were formerly upsetting and undesirable. In these cases the patient may actually make a better psychological adjustment than before the disability, especially where the earlier upset was shared by the female partner.

The female paraplegic seems relatively less disturbed in attempting to maintain sexual relationships with the non-disabled husband. The opportunity which is biologically afforded the female in the sexual act to play a passive role apparently is helpful in these cases. The female paraplegic does, however, express concern over her ability to bear children, and in this sense indicates apprehension over the ability to be an adequate wife and female partner. When the paraplegic disability occurs during the adolescent years there is much more overt anxiety concerning dating, dancing, and petting which again reflects the fears indicated above regarding adequancy as a sexual partner.

It becomes quite more difficult to work with some patients when they actually welcome the paraplegic disability in the sense that it serves some of their own highly personalized needs. This can be observed in cases where the person has always been afraid of meeting and being with other people. Before the disability, it was necessary to make acceptable excuses for remaining apart from other human beings or to engage in interpersonal relations with extreme feelings of anxiety and tension. Now the paraplegic has an acceptable reason for staying at home all of the time. The same is true in those situations described above where the person always had apprehension about engaging in sexual relations and is now free to avoid them altogether. This does not mean that the patient is deliberately and consciously planning these excuses. The mechanism described is usually an unconscious one wherein there is no awareness of the underlying fears and emotions. In fact, these paraplegic patients often verbalize anger over having to give up just that very activity which had heretofore been so undesirable.

This phenomenon may also be observed in those cases where the patient has an underlying wish to be dependent on someone else for physical and emotional support. Of course, this mode of adjustment is characteristic of infancy when most of the child's basic needs are satisfied by his parents, and especially by the mother. Many adults are reluctant to admit that they would really like to return to this earlier stage in which they could depend upon some other person to take care of them, to feed and clothe them, to give them guidance and comfort their sorrows. Society disapproves of this type of behavior in adults, but not when the adult has a paraplegic disability! It is permissible for the paraplegic patient

to be cared for as a child because he is paralyzed. This makes dependency psychologically legitimate.

There are other emotional difficulties which the paraplegic has in his interpersonal experiences, especially with respect to the release of feelings of hostility and anger. It is a normal process for a human being to feel hostile whenever his personal needs are frustrated, and certainly a paralysis of the lower extremities can be a very frustrating situation. Normally a person can handle these feelings of anger in a number of ways depending upon his personality. Such a mechanism as avoidance is commonly used when the person finds himself getting involved in a potentially anger-producing situation. He simply "walks out"! But it is precisely this which is denied the paraplegic. This very situation is frequently observed in paraplegics who have an increasing number of arguments with the wife or husband, parents, children, relatives, and friends. The reason for an increase in these dissensions can be found in any of the already discussed areas. The paraplegic may have adopted the pattern of taking a walk to "cool off" whenever these arguments arose in the past. Now he is not only unable to do this, but becomes additionally angered over this new frustration.

It is also a common and helpful mechanism for people to engage in certain activities which afford muscular release of feelings of anger and tension. Included in these activities would be many athletic events, hunting and fishing, and dramatics. These, again, are the very activities which most paraplegics can no longer perform adequately.

Thus there occurs a two-fold process in which the paraplegic is subjected to an increasing number of frustrating situations with a concomitant decrease in the means to reduce the feelings of hostility and anger which thereby arise. It is not surprising, therefore, to find that these patients are capable of explosive outbursts of anger and rage. To some of these paraplegics even this type of expression of hostility is unacceptable and they may retreat from interpersonal relations in an attempt to avoid further outbursts of this nature.

A psychological factor which apparently plays a more prominent role in female paraplegics is physical appearance in terms of its cosmetic value. The society in which we live puts tremendous emphasis on physical beauty in the woman. Even this can be viewed from many psychological levels; the man who has a beautiful wife is envied by his friends. Youthful appearance, dainty charm, feminine allure and the like are concepts which are constantly kept in the fore of our consciousness by radio, television, motion pictures, and advertisements of all sorts. It then follows

that a loss of such physical attributes might very well arouse fears of losing the husband, or of never being attractive to men again. While beauty is supposed to be only "skin deep" it is just this superficial attachment which plays a strong role in many heterosexual relationships in our society.

In considering the shallowness of many heterosexual relationships we are aware of the relatively large number of divorces which take place when one of the partners in a marriage becomes a paraplegic. Of course, this type of marriage may have discontinued for any number of other reasons, but apparently the problems inherent in the paraplegia are too much for the nondisabled partner. These are many realistic factors which make a marriage with a paraplegic difficult in certain respects, but often mature and well-adjusted people can carry on a very rewarding marriage despite these difficulties. There is another type of relationship which also survives these problems. This is the case in which the nondisabled partner satisfies certain "martyr" needs, the approbation of others, the ability to be maternal to the paraplegic, the "sense-of-duty" feeling, all may contribute to satisfaction in this type of relationship.

The realistic factors which make adjustment within the framework of a paraplegia difficult are seen in many post-rehabilitation cases. The male patient may be unable to engage in any vocational activities on his return home, though family finances are quite low. The wife may then decide to go to work while the husband is relegated to such activities as cleaning the house, preparing the meals and caring for the children. We now have a complete reversal of roles, in which the psychologically threatened male paraplegic carries out a well-rounded feminine program. Again, it is possible for the male patient to feel much more secure in this role, and it is this type of case which becomes most difficult to motivate along vocational lines.

The female paraplegic also may have many doubts about her ability to return home as a competent housewife. The chores of the woman at home involve much physical strength and agility, and when added to that is the caring of youngsters, the task is one which is difficult for a nondisabled woman to manage. Without funds to secure aid with household duties, the paraplegic woman must then get help from someone in the family, most probably the husband. This, of course, may be just another self vindication of her inability to carry on as the housewife.

There may also arise other potentially upsetting situations in which children (if not the patient's own, then those of relatives or friends) make demands upon the paraplegic which are impossible to satisfy. The good, old American custom of the

father acting as a pal to his sons by engaging in hunting and fishing, playing baseball and football, and going on "fatherly" walks is now denied the paraplegic male. The mother who wishes to go shopping with her daughter or engage in other social functions which are important to mother-daughter relationships will now have to face the denial of such satisfying activities. In addition, children have a great facility for asking frank and, often amazingly penetrating, questions about the paraplegic disability. Both the patient and the nondisabled partner must be able to cope with such experiences.

In a sense what we psychologically observe in the paraplegic is an exaggeration of problems which are common to many nondisabled persons. Where the person has always been mature and well-adjusted he will react to the paraplegia in just that manner. Where the person has always been infantile and poorly adjusted there will be just that type of reaction to the disability.

PSYCHOLOGICAL HELP

An understanding of the conflicts and problems in the paraplegic patient is of great aid in trying to work with these people. Knowing where their vulnerable areas lie, and where they can be most readily helped provides an opportunity to make some contact with them.

The original picture of depression is now an understandable state in which we can appreciate the nature of the psychic upset which is taking place. The fear of leaving home for help in a far-off hospital, and the subsequent fear of returning home can be viewed in terms of the psychological problems involved in both areas. The desire to find a suitable vocation, and the reluctance to engage in this work are all part of the tremendous underlying threat to the person's psychological integrity.

Vocational counselling with the paraplegic patient can now be viewed as a far-reaching and complicated task. It is not simply finding an opening in some place within travel distance from home. Nor is it merely selecting a vocation which makes little physical demands upon the paraplegic patient.

The choice of a new occupation must consider the demands it makes upon the paraplegic's concept of himself. Is it a job which appears to the male paraplegic as typically woman's work, or is it a job which leaves the female paraplegic feeling that she is performing duties which are for her masculine and unattractive. On the other hand, caution must be taken not to subject the paraplegic to situations which only convince him of his general inadequacy as a human being. Failure in work is just one more bit of evidence to reaffirm his own sense of failure in life.

In dealing with the overall problem of motivation for rehabilita-

212229°—52——5

tion and return to community living we can now recognize the fear-laden areas and the deep inner depression which may prevent the paraplegic patient from being able to avail himself of outside help. The original phases of counselling may have to be directed toward helping him with these basic psychological problems before constructive planning can take place.

It can be appreciated, therefore, that a paraplegic disability is a profound physical and psychological problem, and that only a thorough appreciation of both can lead to effective rehabilitation.

REFERENCES

Bender, Lauretta: *The Body Image in Brain-Damaged Children.* Journal of Social Issues. Vol. IV, No. 4, Fall, 1948. P. 86.

Best, C. H. and Taylor, N. B.: *The Physiological Basis of Medical Practice.* Baltimore: The Williams & Wilkins Co., 1950.

Cooper, Irving S., Rynearson, Edward H., Bailey, Allan A., and MacCarty, Collin S.: *The Relation of Spinal Cord Diseases to Gynecomastia and Testicular Atrophy.* Proceedings Staff Meetings of the Mayo Clinic, Vol. 25, June 7, 1950, No. 12.

Cooper, Irving S., Rynearson, Edward H., MacCarty, Collin S., Power, Marschell H.: *Testosterone Propionate as a Nitrogen-Sparing Agent After Spinal Cord Injury.* The Journal of the American Medical Association. Vol. 145, No. 8, Feb. 24, 1951.

Davis, John Eisele: *Rehabilitation: Its Principles and Practice.* New York: A. S. Barnes and Co., 1946.

Dorland, W. A. Newman: *The American Illustrated Medical Dictionary.* Philadelphia: W. B. Saunders Co., 1948.

Freeman, L. W., *Treatment of Paraplegia Resulting from Trauma to the Spinal Cord.* The Journal of the American Medical Association. Vol. 140, No. 11, July 16, 1949.

Garrett, James F.: *Rehabilitation of the Paraplegia.* Danville State Hospital Mental Health Bulletin, Vol. 30, No. 1.

Goldthorpe, Donald R.: *Understanding the Paraplegic.* Hygeia. May 1947, 25, pp. 358–359.

Hazouri, L. A., Mueller, A. D.: *Pain Threshold Studies on Paraplegic Patients.* Archives of Neurology and Psychiatry, Vol. 64, Nov. 1950.

Herman, Myron: *Role of Somesthetic Stimuli in the Development of Sexual Excitation in Man.* Archives of Neurology and Psychiatry. Vol. 64, No. 1, July, 1950.

McLaughlin, E. J.: *An Investigation of the Personality Characteristics and Attitudes of the Paraplegic Patient.* Unpublished M. A. Thesis, Fordham University, 1948.

Mosak, H. H.: *Personality Adjustment of Paraplegic Veterans.* Hines, Ill.: Hines Paraplegic Center, 1948.

Mueller, Alfred D.: *Personality Problems of the Spinal Cord Injured.* Journal of Consulting Psychology. Vol. XIV, No. 3, June, 1950.

Munro, Donald: *Rehabilitation of Veterans Paralyzed as the Result of Injury to the Spinal Cord and Cauda Equina.* The American Journal of Surgery, Vol. LXXV, No. 1, January, 1948.

Munro, Donald, Horne, Herbert W., Paull, David P.: *The Effect of Injury to the Spinal Cord and Cauda Equina on the Sexual Potency of Men.* The New England Journal of Medicine, Vol. 239, No. 25, Dec. 16, 1948.

Nagler, Benedict: *Psychiatric Aspects of Cord Injury.* American Journal of Psychiatry. Vol. 107, No. 1, July, 1950.
Pannett, C. A.: *Surgery.* London: Hodder and Stoughton, Ltd., 1947.
Rusk, Howard A., and Taylor, Eugene J.: *New Hope for the Handicapped.* New York: Harper and Brothers, 1946.
Talbot, Herbert S.: *A Report on Sexual Function in Paraplegics.* The Journal of Urology, Vol. 61, No. 2, Feb. 1949.
Thom, Douglas A., Von Salzen, Charles F., Frommer, Allan: *Psychological Aspects of the Paraplegic Patient.* The Medical Clinics of North America. Philadelphia: W. B. Saunders Company, 1946.

CEREBRAL PALSY

James F. Garrett

Few disabilities have received as much emphasis during the past few years as cerebral palsy. And yet with this emphasis there has not come the understanding and social acceptance that might be expected. Perhaps the reason lies in the fact that cerebral palsy differs from other disabling conditions because it may include all the functions of the brain. It may not only represent a motor handicap but may include sensory and mental deviations as well. So in one individual may be found the following major handicaps: visual, auditory, and sensory defects; epilepsy; speech defect; mental retardation; self-help inability; inability to walk or to move about in any way; orthopedic deformities; as well as general medical and pediatric defects. These disabilities may run the gamut from mild to severe.

PHYSICAL ASPECTS

There are approximately 336,000 such persons in the United States. It is estimated that seven cases of cerebral palsy are born each year in each 100,000 of the total population, although one of these children dies before the age of four to six years *(1)*.

Because this disability is due to damage to the brain before, during, or shortly after birth, it is frequently identified in popular parlance as *birth injury*. This association of the disability with the birth process is at the root of much of the emotional tension existing in families with cerebral palsied children—an aura of blame and guilt as well as punishment. In this connection it is well to note that cerebral palsy has a wide variety of causes, anyone of which may operate in a particular case—structural anomalies, disease of the mother, accident during pregnancy, accidents during labor, and Rh factor among them. No effort will be made to discuss these causes here.

The first description of these cases was presented by Little *(2)* in 1862, hence the term frequently applied—*Little's disease*. The typical example of such cases was the feebleminded, drooling child, with scissors gait and marked general spasticity. Although later study showed that this was not the typical cerebral palsied child,

[1] This discussion concerns congenital cerebral palsy only.

the sterotype persisted and still persists among many, making rehabilitation in the total sense extremely difficult.

The usual method of classifying cerebral palsy emphasizes the orthopedic aspects and is as follows:

1. *Spasticity.* This represents a hyper-irritability of muscle to stimulus with stiffness of muscles and inadequacy of voluntary control.

2. *Athetosis.* This may be defined as involuntary motion of unrelated muscles which produces incoordination as a result of superimposed voluntary contraction.

3. *Overflow.* This is involuntary motion resulting from voluntary attempts at motion, usually of another part, e. g., grimacing while writing or facial overflow while talking.

4. *Ataxia.* This, roughly, is incoordination in voluntary effort to perform a given motion.

5. *Tremors.* These may be fine or coarse, intentional or non-intentional, of a recurrent and rhythmic nature.

6. *Rigidity.* This is a sustained, non-voluntary condition of contractility and loss of elasticity.

These varieties seldom occur in pure form, but combine in various degrees. Most discussions of a psychological nature concern themselves with spasticity (involving the cerebral cortex), athetosis (basal ganglia), and ataxia (cerebellum).

MENTAL ABILITY

An objective evaluation of the mental ability of the cerebral palsied is difficult in many cases. Most present devices for measuring intelligence involve the use of speech or the use of the hands and either or both of these functions may be involved in the case of many cerebral palsied. Many test responses are on a time basis and the motor response of many cerebral palsied are slow and labored with consequent ready fatiguability. Hence, interpretation of the results of intelligence tests is difficult, particularly the decision as to whether failure is due to physical disability or lack of mental ability. Among many professional personnel there is a tendency to interpret poor preformance as being due more to disability than to limited mentality, thus presenting the cerebral palsied in a more favorable light than is the case actually. This raises the question of the measured mental ability of individuals with cerebral palsy.

Most investigators agree that there is a far higher incidence of borderline and mental deficient intelligence among the cerebral palsied than is found in the general population. The main difference of opinion is that of the extent to which this is found. Phelps *(3)* states that 30 percent are mentally defective, Burgemeister and Blum *(4)* found 50 percent to be seriously enough

retarded to fall within the classification of defective intelligence, Wolfe *(5)* found 44 percent retarded, Cohen estimated 31 percent of his group to be retarded, the author in an unpublished study found 20 percent retarded, and McIntire *(6)* found 28 percent retarded. Apparently selective factors have operated and determined the kinds of persons seen, e.g., were the group located in a private hospital, a public hospital, a clinic, or a vocational training center for adults. The factors have their effect on the numbers of retarded found. McIntire's figures are usually taken to be the most typical, and are: gifted, none; superior, 4.0 percent; high average, 8.8 percent; average, 25.0 percent; low average, 7.6 percent; dull normal, 11.0 percent; borderline, 5.8 percent; feebleminded, 27.6 percent; and undetermined 10.2 percent. Hence, defective mental ability occurs about fourteen times as frequently among the cerebral palsied as in the general population.

In this connection it may be well to examine whether certain types of cerebral palsy tend to be associated with lower *measured* mental ability than other types. Since the cerebral cortex is damaged in the spastic group it would appear that one could expect this group to have lower ability than the *athetoid* group. One might infer this to be so from McIntire's *(7)* article. However, Burgemeister and Blum *(8)*, while showing the widest range of ability to be in the spastic group, found a greater incidence of feeblemindedness among the athetoids. These findings were also approximated in an unpublished study by the author, as well as by Wolfe *(9)*. Hence, it would not be wise to assume that any one type of cerebral palsy is associated with mental defect. On the other hand, one can expect a much greater spread of mental ability among spastics than among the other types of cerebral palsy, although the reason for this on any neurological basis is not at all evident.

Some have been of the opinion that there is a connection between the side of the body on which there is a hemiplegia (or, in the case of a quadraplegia, the side on which the disability is more pronounced), and mental ability. These opinions are confined to the *spastic* group. McIntire *(10)* concludes that "cerebral palsied children who are spastic hemiplegias or quadriplegias are more apt to have mental retardation amounting to borderline or feebleminded intelligence if the dyskinesia is present only, or is more pronounced on the sight side." This finding coincides roughly with that which is found in adults suffering brain damage, i.e. usually there is impairment of mental functioning and frequently some type of aphasia when there is a right hemiplegia. Because of this coincidence, McIntire's findings have been widely accepted. However, the author was unable to confirm these findings in a group

presenting themselves for vocational training in a rehabilitation center, nor did Cohen *(11)* in a group at the University of Iowa. Hence, there is room for doubt as to the connection between laterality and mental defect, although the majority lean to the opinion that right hemiplegia is more frequently associated with mental deficiency. It must be remembered, however, that the neurological basis for this is subject to considerable controversy.

It is agreed, however, that the spastic group of cerebral palsied present the general picture of the brain-injured without motor deficit. So Cotton *(12)* reports a wider range of individual differences in type of response, a greater tendency toward more concrete types of response, with less ability to shift toward the more abstract forms of behavior, and a greater tendency toward stereotyped responses. One can expect a greater tendency to distractability and much irregularity in performance. Because of the latter, cerebral palsied individuals are frequently called *erratic.* Some are so readily distracted that they must function in a quiet and unornamented room and, in cases of marked figure-ground difficulty, lack of discriminatory ability may result in confusion. Many demonstrate formalistic behavior, in which they overstress orderliness and attack problems in a comparatively compulsive fashion even though the system is not warranted by the task at hand.

It is apparent that any evaluation of an individual with cerebral palsy must be comprehensive and will require a well trained person to administer and interpret the tests used. Probably one of the best summaries of mental evaluation in this field was made by Doll, Phelps, and Melcher *(13).* Their scheme covered the following:

1. Language
   a. Use.
   b. Comprehension.
2. Attention.
3. Perception and discrimination
   a. Familiar objects.
   b. Form.
   c. Color.
   d. Pictures (objects in).
   e. Differences.
   f. Likenesses.
4. Association
   a. Names with objects.
   b. Association responses.
5. Memory.
6. Number sense.

7. Imitation.
8. Performance.
9. Ability to learn.

At any event, in the case of cerebral palsy of the spastic type, the evaluation should include not only standard intelligence tests evaluated as above but also clinical tests of the effects of brain damage.

EMOTIONAL ADJUSTMENT

There have been many opinions expressed regarding the personality adjustment of the cerebral palsied, but very few objective studies employing psychological tests have been completed. Most suggest that, in general, there is much maladjustment in this group. The most interesting and widely held theory in this field is that of Phelps *(14)* which stresses the differences in personality between spastics and athetoids. According to this theory, the spastic is very apprehensive and fearful, while in the athetoid fear is not usually overdeveloped; the athetoid is usually very affectionate, wants attention and likes to be fondled and caressed, while the spastic does not like demonstrations of affection as a rule; the athetoid may become extremely angry because of frustration, while the spastic develops a phlegmatic attitude. However, the experience of many other medical clinicians has not led them to adopt these principles and some have expressed their findings verbally in the opposite direction. This controversy has not been resolved as yet, but it is especially difficult to accept the idea of any individual not desiring love and affection.

In an effort to explore the possibility that measureable and significant personality differences existed between cerebral palsied (spastic) and non-handicapped persons, Tracht *(15)* administered a personality questionnaire to two similar groups. He found a greater amount of social and thinking introversion, depression and emotional instability among his cerebral palsied individuals. He also found little difference between males and females among his cerebral palsy group except for a greater degree of social introversion in the females. Those with speech difficulties were found to be more introverted and more emotionally inclined, as was true of those self-rated as not severely handicapped as compared with those self-rated as severely handicapped. Apparently the matter of social communication is important in adjustment. In addition, the more nearly normal one feels physically, the more difficult adjustment becomes. This latter can perhaps be explained in terms of social expectation, the standards of society not being as high for those with severe physical involvements.

In analyzing the adjustment of a group of cerebral palsied individuals, Giden *(16)* finds three deficiencies in personality: an

excessive use of the personal pronoun, "I," "me," and "mine," a lack of sex education, and an insecurity of faith in something superior to man. In the first instance, she found that "the group had no interest outside themselves, their jobs, and their extremely narrow daily lives." Regarding sex education, she feels that this lack is due not only to deficiencies in early training but to difficulties in acceptance by members of the opposite sex. The third deficiency "originates with the parental reaction upon first discovering that their child has this severe multiple handicap."

The author in an unpublished study of 74 applicants for vocational training in a rehabilitation center found the majority of his cerebral palsy clients testing "Average" in the *Emotional* category of the Bell Adjustment Inventory, but there was a trend toward "Retiring" on the *Social* category. The results were not different for spastics or athetoids, both showing the same trend to the same degree. However, it should be noted that the cerebral palsy group did not differ from the total disabled group who were the subjects of the study.

Consideration must also be given to the previously mentioned fact that the spastic cerebral palsied resemble very closely the brain injured who do not have physical limitation. Hence, one must be prepared particularly for the manifestations of *disinhibition,* the characteristic features of which are hyperactivity, restlessness, and lack of restraint. It may manifest itself in an exaggerated attention to object qualities that elicit motor response or a candor in discussing problems out of proportion to the rapport established. The latter is sometimes at the root of job difficulties experienced by certain individuals with cerebral palsy.

Because of the association of the disability with the birth process, the family atmosphere in cerebral palsy is more tense than is true in most other disabilities. Little *(17)* found that most of the families studied at the Children's Hospital of Buffalo showed marked evidence of emotional disturbance secondary to having a child with cerebral palsy. Many parents blame themselves for their child's disability and have severe feelings of shame and guilt. These become manifest in a variety of ways, most of which are detrimental to the personality adjustment of the cerebral palsied individual. While the usual pattern is over-protection with consequent over-dependency, other reactions such as utter rejection also occur. When one adds the social isolation which ensues from rejection by one's peers, the introverted, autistic personality pictured by Tracht becomes more understandable. On the other hand, one may find a general negativism which make program planning difficult.

So, as Benda *(18)* points out, if the child had intelligently

loving parents who provide him security and the opportunity for maturation, he may evolve a realistic concept of the world. The absence of these means an insoluble future.

SUMMARY

It is apparent that, in dealing with a client with cerebral palsy, the counselor must be prepared for a person with possible multiple handicaps. He will expect to find a greater incidence of mental retardation among this group than in his general caseload. However, he must not confuse physical disability with mental defect, and so consideration must be given to careful evaluation of intelligence and possible organic brain involvement. The great dilemma confronting counselors is in the case of the intelligent cerebral palsied who has great physical handicaps which place almost insurmountable barriers in the way of realizing his potential. To say that all persons with cerebral palsy belong on farms or in colonies is a marked oversimplification. Careful attention to individual abilities and aptitudes, to ability for self-care, and to placement opportunities constitutes the only acceptable approach for the counselor.

Reduction of tension by the counselor in his contacts with the client will mean much since this group will be adversely affected physically by any mental upset. The counselor should be aware of this fact and not judge the cerebral palsied client adversely during the first interview when the client is probably at his worst due to the emotional tension involved. In view of the effects of brain damage noted in the preceding discussion, interviews with cerebral palsied clients in crowded, noisy offices will also prove misleading.

Counselors must also be prepared for the probable poor personality adjustment of many cerebral palsied clients, particularly in their ability to realistically appraise their work potential and assume responsibility with a minimum of supervision. Counselors should be ready to function in a supportive relationship with most of their cerebral palsied clients. Close, understanding supervision in the early phases of training, particularly when work habits are being developed, is essential if vocational rehabilitation is to be successful.

Above all, care must be taken not to respond to the cerebral palsied as a stereotype. All concerned should recognize the factor of individual differences and realize that each cerebral palsied client differs from the next one. The psychological adjustments in terms of acceptance of the client are not only made by the client but also by the counselor. Realization of the many facets of the adjustment process-physical, mental, social, and vocational—will convince the counselor of the need for a total and integrated

evaluation of the client, as well as for a comprehensive rehabilitation plan.

REFERENCES

1. Phelps, W. M.: *The Farthest Corner.* National Society for Crippled Children and Adults, Chicago, 1947, 24 p.
2. Little, W. J.: *On the Influence of Abnormal Parturition, Difficult Labor, Premature Birth, and Asphyxia Neonatorum, on the Mental and Physical Conditions of the Child Especially in Relation to Deformities.* Tr. Obst. Soc. London, 3:293–344, 1952.
3. Phelps, W. M.: *Characteristic Psychological Variations in Cerebral Palsy.* Nervous Child, 1948, p. 10–13.
4. Burgemeister, B. B. and Blum, L. H.: *Intellectual Evaluation of a Group of Cerebral Palsied Children.* Nervous Child, 1949, p. 177–182.
5. Wolfe, W. G.: *A Comprehensive Evaluation of Fifty Cases of Cerebral Palsy.* Ph.D. Thesis, State University of Iowa, 1947.
6. McIntire, J. T.: *The Incidence of Feeblemindedness in the Cerebral Palsied.* American Journal of Mental Deficiency, 1946, p. 491–494.
7. McIntire, J. T.: Op. Cit.
8. Burgemeister, B. B. and Blum, L. H.: Op. Cit.
9. Wolfe, W. G.: Op. Cit.
10. McIntire, J. T.: *A Study of the Distribution of Physical Handicap and Mental Diagnosis in Cerebral Palsied Children.* American Journal of Mental Deficiency, 1949, p. 624–626.
11. Cohen, L.: *Statistical Analysis of 100 Records of Hemiplegic Patients.* Proc. of Dept. of Ortho. Surg. State Univ. of Iowa, 1949, Sect. D.
12. Cotton, C. B.: *A Study of the Reactions of Spastic Children to Certain Test Situations.* J. Genet. Psych., 1941, p. 27–44.
13. Doll, E. A. Phelps, W. M. and Melcher, R. T.: *Mental Deficiency Due to Birth Injuries,* Macmillam Co., 1932, 166–173.
14. Doll, E. A. Phelps, W. M. and Melcher, R. T.: Op. Cit.
15. Tracht, V.: *A Comparative Study of Personality Factors Among Cerebral Palsied and Nonhandicapped Persons.* MA Thesis, Univ. of Chicago, 1946.
16. Giden, F. M.: *"and Descant on Mine Own Deformities."* Nervous Child, 1949, p. 234–243.
17. Little, S.: *A Note on an Investigation of the Emotional Complications of Cerebral Palsy.* Nervous Child, 1949, p. 181–182.
18. Benda, C. E.: *Developmental Disorders of Mentation and Cerebral Palsies.* Grune and Stratton, 1952, p. 523.

PSYCHOLOGICAL FACTORS IN MULTIPLE SCLEROSIS

Molly R. Harrower and Rosalind Herrmann

FACTS ABOUT MS

Although the material in this chapter—as its title states—deals primarily with the psychological factors involved in the care and treatment of multiple sclerotic patients, it may be well to bring together at the outset some "Facts about MS" as they have been succinctly summarized in a recent pamphlet.

What is multiple sclerosis?

Multiple sclerosis, also known as *disseminated sclerosis, is one of a rather large group of chronic diseases of the central nervous system.* In multiple sclerosis one finds many areas in the brain and spinal cord, scattered indiscriminately throughout the central nervous system, in which myelin (a fatty sheath which in normal healthy individuals covers the nerve fibres) has been dissolved or destroyed.

The process by which this dissolution or destruction is accomplished is not known, but it causes either complete *stoppage of these nerve impulses*—thus *producing paralysis* of the parts of the body innervated by these nerves—or the impulses pass through the affected nerves either enfeebled or altered, so that those parts of the body innervated by such nerves perform their functions in a disturbed fashion.

Symptoms: Double vision, staggering and inability to keep one's balance, numbness of parts of the body, tremor, nystagmus (involuntary movements of the eyeball), extreme weakness, speech difficulties, emotional disturbances, bladder troubles–these are common first symptoms.

How many people die of multiple sclerosis in the United States?

There are *at present no available figures* as to the number of deaths from multiple sclerosis in the United States. Multiple sclerosis is not a reportable disease and does not appear on morbidity statistics. (It is the actual cause of death in many instances where the cause of death listed is some other disease which has been brought on by multiple sclerosis, such as pneumonia, heart, circulatory failure and infections.)

How many people are suffering from multiple sclerosis in the United States?

With the present status of medical knowledge no figure can be given or even estimated with any degree of accuracy as to the number of people suffering from multiple sclerosis in the United States. *An estimate would be well over 200,000.* It is a disease of extremely difficult early diagnosis, and thousands of cases are thus missed. It is frequently mis-diagnosed as hysteria, syphilis, polio, and other neurological diseases.

A statistical survey is now being conducted by the National Multiple Sclerosis Society in cooperation with the Federal Security Agency which will determine the incidence of the disease and the effects of climate, race, and geography on multiple sclerosis. This survey has been under way for the past 2 years, and it is hoped that it will be completed and reported on by the end of 1952.

How are the known cases of multiple sclerosis apportioned as to age groups?

Multiple sclerosis in the majority of cases is a disease of young adults, stricken during the most productive years of their lives, *between the ages of 20 and 45.*

However, multiple sclerosis is not uncommon in children under *11* years of age, but the disease more frequently strikes persons between *11 and 18.*

What are the research leads toward better treatments or cures in the field of multiple sclerosis?

There are many leads in multiple sclerosis, the most important of which are:

1. The study of the ultrastructure of the myelin sheath from the standpoint of biophysics and biochemistry, using polarized light, X-ray refraction and the electron microscope.
2. The study of the mechanism of remissions.
3. Continued clinical investigations with ACTH and Cortisone have produced stimulating responses in early cases—certainly of a nature which makes it mandatory to continue investigative efforts in this field.
4. Study in virus etiology to determine whether multiple sclerosis is a virus disease or a disease aggravated by virus disease.
5. Study of allergy.
6. Study of deficiencies in blood circulation of the brain and spinal cord.
7. Study of nutrition in relation to multiple sclerosis.
8. Psychological studies. As many multiple sclerosis patients have disturbed psychological backgrounds, study in this field might determine whether disturbed psychological background is a contributing cause of the disease or one of the manifestations of the disease.

9. Adenosine Tri-phoshate (ATP). There are several theoretical reasons why ATP may be a useful agent in multiple sclerosis and similar diseases. Very few cases have been briefly studied to see whether this drug, known to be involved in the metabolic processes of all cells, may have important therapeutic application.

With this as a background, we may turn to the more specific consideration of the psychological aspects of the disease, asking first, "Is there such a thing as an 'MS personality'?"

THE "MS PERSONALITY"—RECENT PSYCHIATRIC AND PSYCHOLOGICAL STUDIES

Until a few years ago, the psychic status of the patient with multiple sclerosis was written off rather summarily in statements concerning the likelihood of his "euphoric condition." More recently, however, a number of writers have concentrated attention on the multiple sclerotic personality structure, both in regard to the pre-morbid characteristics and at various stages in the disease.

For example, Braceland and Giffin, *(1)* in their studies gave psychiatric examinations to 75 multiple sclerotic patients, and, in addition, assessed the clinical records of 200 others for pertinent data. Their estimate of this group was that 10 per cent was euphoric, 20 per cent depressed, 18 per cent showed lability of mood, 12 per cent showed unusual irritability, while the remaining 40 per cent reacted with "moods commensurate with their conception of the probable outlook for the future of their disease."

Further intensive study of the patients showing *euphoria* convinced these authors that there was evidence in each case of considerable cerebral involvement and that, therefore, this euphoric condition *related not to multiple sclerosis in all its forms* but only to those cases where cerebral pathology had introduced the characteristic affect-defense reaction described by Goldstein as a shield against "catastrophic situations." To quote the authors, "Seen in this light, the changes in mood, thinking and behavior frequently mentioned in relation to multiple sclerosis can be recognized as expressions of a flight from overwhelming situations."

While those patients showing a euphoric mental condition proved to have obvious cerebral involvement, the converse of this was not found to be true, namely not all persons with established cerebral pathology showed this euphoric reaction. A total psychiatric picture, therefore, needs also to take into account severe depressions, on the one hand, and those persons who show relevant or appropriate responsiveness, on the other.

Braceland and Giffin felt that diverse clinical types and all gradations of emotional reactions were to be found in this group of patients as a whole.

Attempting to relate the onset of the disease to emotional disturbances was considered by these authors to be unfruitful and

the task was abandoned for they felt that there was not sufficient evidence at the present time to state that psychiatric trauma causes the disease.

Braceland and Giffin distinguish three stages of this illness. In the initial stage, they felt that the personality makeup of the patient colors or can account for the total personality picture, whereas in the intermediate stage, the basic personality makeup is modified by or superimposed on by the stereotype of the beginnings of invalidism and is further modified by forces aroused by the symbolic significance of the area of the body which is affected. Finally, in the chronic stage, the pre-morbid personality is of still less importance for at this point the individual may react with the classical signs of organic disease of the brain. Braceland and Giffin consider this as "the organic reaction type, mediated to a degree by previous personality traits, but with the organic factors of obviously greater importance."

The summary which these authors give states that, "It appears from our studies that multiple sclerosis *does not put a specific characterological imprint upon the personality organization of the individual patient, but that rather the reverse is true.* The individual as a whole reacts to his disease in a manner which is to some degree dependent upon his personality makeup. This reaction is modified by such factors as the number, extent and location of the neuropathologic lesions, the social importance of the incapacity of the individual and economic, marital and environmental significance of all of these to him."

As will be seen shortly, psychological studies in which a battery of diagnostic tests were used, *while emphasizing certain common characteristics of the multiple sclerotic patients,* showed no evidence of the "typical imprint" mentioned above, and may therefore be considered as providing additional confirmation from an independent source.

Approaching the patient from the point of view of rehabilitation, Rusk *(2)* comes to the same conclusion. He states, "The previous personality of multiple sclerotic patients does not conform to any particular pattern. We have found immaturity in certain cases and a great deal of independence and relative maturity in other cases."

While Braceland and Giffin, and Rusk have been struck by the *diversity* of the individual multiple sclerotic personality structure, the studies of Grinker *(3)* and Langworthy *(4)* highlight certain *similarities.* Interestingly enough, independent psychological investigations also corroborate the same particular traits found frequently in multiple sclerotic patients by Grinker and Langworthy.

Grinker found that the MS patients showed a characteristic attitude in their relation to the mother in the pre-morbid condition. There was an intense desire to be close to the maternal figure which, however, was not gratified—the mother remaining somewhat aloof in interpersonal relationships. The characteristic of these patients, however, seemed to be such that there was no resentment or anger expressed as a result of these unsatisfied needs. Gringer also observed that by and large these patients were affable, good-natured, anxious to be liked by everyone, but at the same time were unable to make very close attachments. He found an *absence of free anxiety*, an easy-going, happy-go-lucky attitude. This attitude of satisfaction or cheerfulness was frequently incongruous in later life when no negative feelings were expressed, despite lack of gratification.

Elsewhere this author states that the psychological condition of the multiple sclerotic exemplifies "great immaturity, and since early infancy having an excessive need for love and affection which is not gratified in childhood. These frustrations evoke anger which must be repressed in order to preserve whatever gratifications are available." Grinker dramatizes his concept in the suggestion that the multiple sclerotic patient has become physiologically, the infant that he is, psychologically.

In a small group of patients whom Langworthy studied intensively, he found certain common personality traits. He was led to these conclusions by the discovery that both mechanisms of conversion hysteria and multiple sclerosis may be present at the same time in the same patient. "Basic emotional difficulties may trouble these patients before organic symptoms appear. They are likely to develop conversion symptoms before or after the onset of multiple sclerosis. These individuals not only show conversion symptoms, but they also have a personality structure characteristic of conversion hysteria. Patients are emotionally immature persons who have not even achieved an adolescent stage of personality development. They are unable to deal adequately with sexual problems and anxieties of a sexual nature may even be converted into physical symptoms. As passive individuals, they are resentful of domineering, aggressive persons. It would appear that it is in relation to this issue of domination that they are likely to develop conversion symptoms."

Langworthy goes on to present the tentative theory that "Emotional disturbances may lead to cerebral-vascular spasms producing organic changes. Often individuals with multiple sclerosis show great vasomotor instability during periods of tension and at times when symptoms appear."

In a case which he discusses in detail, Langworthy feels that the issue of passivity versus aggression seems to be a key problem. He further suggests that due to the absence of anxiety ("anxiety appears to be the stuff out of which emotional growth is made,") the patients remain at an infantile emotional level.

Langworthy's point of view is experssed further thus: "In my experience with the personality of patients with multiple sclerosis, there appears to be some similarity in their emotional problems. They were rather passive individuals caught in an entangling emotional relationship with the mother. They seem to be struggling towards an aggressive, domineering role in the relationship to others. When they seem to lose this struggle and were pushed around by more domineering people . . . none of the patients in this group showed a mature outlook in sexual matters, but all have shown a tendency to a conversion anxiety over sexual problems."

In a report of an experimental study, Brickner *(5)* brings evidence to show that in general it would appear that emotional stress at least sometimes precipitates attacks. He feels, however, that there is not the remotest reason for calling multiple sclerosis a psychogenic disease and that the most that can be said is that emotional factors may be of importance in provoking attacks or abetting regression.

An example of the type of case quoted by Brickner is the following:

"This patient who was very mildy incapacitated by multiple sclerosis became enraged and evicted bodily two young men who invaded his shop with intent to steal. He paid no more conscious attention to the event, felt unusually well and on his return home for supper, even commented to his wife on how lightly he was walking. Immediately after supper, he felt tense and his legs jerked as they had been doing for a long time when he was under tension or when he laid down. Unwillingly, and with some anger, he yielded to his wife's demands that they go to the movies where he continued to be upset. He continued to be tense at intervals during the night. Next morning, he was unchanged. In an attempt to gain relief from anger-tension, he took a hot bath, followed by a fairly cold shower. Immediately he felt a girdle sensation about his groin and buttocks. His left lower extremity felt heavy. He soon discovered urinary hesitation. His gait deteriorated over the next few days. Anger and tension persisted."

However, as an important corollary to the cases cited, Brickner calls attention to the fact that many patients with multiple sclerosis go through emotional distress without detectable neurological sequelae.

212229°—52——6

It is clear from the above that there exists today a divergence of opinion concerning the *relative* importance of the personality structure of the multiple sclerotic patient in the relation to his susceptibility to the disease. Grinker's findings would at least suggest that, compared with other personality types, those individuals with exaggerated dependency needs who repress their hostility following the failure of such gratification, appear with greater frequency as patients with multiple sclerosis. However, his studies do not show a comparable sample of patients with identical personality structures who do not have the disease. It is more than probable that such a group could be found. Again, Langworthy's studies, though suggestive, are less impressive than they would be were they contrasted with data from investigations made on other patient groups. For obviously, not all patients who are sexually immature or who convert anxiety, who are passive and have problems in regard to aggresive and domineering relatives, develop multiple sclerosis. The most we can say is that no series of intensive case histories have been advanced which show the multiple sclerotic as an individual with exaggeratedly aggressive and hostile trends.

Psychological studies on multiple sclerotic patients have been concerned to date with two main issues. There have been those, notably Canter's, which attempt to measure intellectual deterioration insofar as it occurs during the progress of the disease. There are also studies which have been concerned with the question of whether a characteristic multiple sclerotic personality could be detected through the projective techniques, as, for example, Beck *(6)*, Burgemeister and Tallman *(7)*, Harrower and Kraus *(8)*. One of the problems arising here is to what extent the typical "organic personality"—easily demonstrable from the projective test findings in cases of cerebral involvement—can be said to characterize the multiple sclerotic patient group as a whole.

Concerning the first problem, Canter summarizes his findings as follows: "In multiple sclerosis, there appears to be an impairment of intellectual and emotional functions which can be objectively measured by means of psychological tests. This psychological impairment is progressive and can best be measured by repeated psychological examinations. This impairment and loss of capacity apparently parallels neurologic changes and may be utilized to substantiate the trend or the change in the degree of clinical-neurological impairment. Generally the most striking psychological loss is inability to analyze and synthesize abstract problems. Furthermore, there is less in learning ability, psychomotor coodination and speed as well as some increase in irritability and emotional instability *(9)*.

Using one of the best known projective methods, the Rorschach test, Burgemeister and Tallman, who examined MS patients, felt that there appears in these patients to be "an intellectual constriction and an impoverishment of personality which is out of keeping with their educational and cultural background." However, it is important that neither these authors, Beck, nor in the investigation of Harrower and Kraus to be reported later, was the typical so-called "organic personality" *(10)* found.

The absence of the "organic" test picture (except in a few cases where cerebral involvement was suspected) links up closely with the statements of Braceman and Griffin, namely the similarity between the multiple sclerotic patient and the "organic type" is apparent only during the chronic or final stages of the disease when organic factors play an ever-increasing role.

The corollary to the absence of specific "organic personality" psychological pictures amongst multiple sclerotic patients is the positive evidence for a wide variety of basic personality types as reflected by the Rorschach test was found by Harrower and Kraus.

These authors, namely Harrower and Kraus, recently administered a battery of psychological tests to 140 patients with multiple sclerosis and a comparable battery of tests to five independent groups of controls. These controls included 200 patients with emotional disturbances, 258 "normal" individuals or persons without overt psychological or somatic disturbances, 29 Parkinson patients, 21 polio patients. This study followed a previous pilot study in which they had found that while no typical, stereotyped or uniform personality picture of the patients with multiple sclerosis emerged, nonetheless in every test used, there were some items which differentiated the patient group from the controls. These findings in general terms could be epitomized as showing that in the multiple sclerotic there is an over-emphasis on dependency needs, a virtually complete absence of body-centered anxiety, a minimum of inner conflict or an attitude of resignation and an unrealistic tendency to see the world as through colored glasses. These authors felt that it was important to emphasize that the discovery of certain trends in the group as a whole did not mean that every patient in the multiple sclerotic group showed these characteristics. It was only that the incidence of these traits was significantly higher in this group than in the controls. Individual multiple sclerotic patients deviated markedly from the general pattern, some giving no indication of the characteristic constellation of findings.

This large-scale study reinforced the findings of the initial one. The same traits and particularly those of over-dependency and an unrealistic sense of body-centered anxiety were as strongly evidenced as in the pilot study originally made. A breakdown of the

multiple sclerotic group into cases during remission, cases which were mild and cases which were advanced showed certain distinct group characteristics.

Characteristics of the patients in remission was a higher percentage of persons with superior intelligence, the lowest amount of erraticness of performance. The authors also found on the personality test that the patients in remission showed a capacity for richer psychological experience in living. There was the highest percentage of expanded personality traits. A further characteristic could be described as a more realistic willingness to allow the anxiety component to register as such in conciousness. These findings obviously raised the question, "Do these so-called better personality characteristics allow for remission to take place or are they the result of changes in the disease progress?"

Among the patients with mild early forms of the disease were found the greatest amount of overt distress as regards the experience of the illness itself. It could be said that the amount of anxiety related to the disease was in inverse proportion to the extent to which the patient was seriously handicapped at the time of the examination.

Harrower and Kraus found that the so-called dependency scores was higher among those patients examined immediately upon arrival than in those who had been exposed to the treatment. These patients also showed quite a shift towards extraversial living as reflected in the Rorschach Test.

As a result of these findings, the authors were left with the feeling that the psychological characteristics could not be considered as predisposing the individual to the disease rather that the disease imposed certain standard conditions on the individual patient, leaving its mark to a greater or lesser degree, depending on the patient's pre-morbid personality structure. When living conditions were changed, changes were reflected in the test scores.

PSYCHOLOGICAL DIFFICULTIES PECULIAR TO THE MS SITUATION

Recent psychological investigations on severely handicapped persons including MS patients have made explicit certain potential sources of psychological distress which are inherent in these conditions of invalidism and while it is clear that physicians are, for the most part, implicitly aware of these difficulties and, in many cases, may be able to mediate directly to them, it may be helpful to discuss them here.

The concept of marginality, so-called by Barker, Wright and Gonick *(11)*, epitomizes the conflicts which may be generated in a patient when he can neither live within the world of the normal, healthy individual, nor find his place as an accepted and recognized invalid. Difficulties of this kind would appear to be rather

frequent in the initial stages of multiple sclerosis. The patient, that is, is faced with a conflict: Shall he attempt to continue to play a role as a citizen in the "normal world" although the odds against his competing successfully are clearly against him? Shall he, that is, struggle to outwit or ignore some of his minor symptoms demanding of his fellows that he be treated without any special consideration? Or, shall he, on the other hand, accept his symptoms and the handicaps they bring with them, accepting assistance from others and moving consciously into the framework of the invalid?

It is quite clear that there comes a point where the symptoms cannot be disguised for, for instance, a cane will have to be used, a wheelchair resorted to, where the patient cannot read for himself, where he must have assistance in lifting objects, when the difficulties reach a certain degree, when a threshold is crossed, when there can no longer be doubt about invalidism. But the particular psychological disturbance to which we are referring occurs at a time when the symptoms have not reached these proportions and when, objectively, the patient may not appear to be nearly as badly off physically as many others.

We are directing particular attention, however, to the assistance which might be given to the patient during the time when he is fighting a battle to remain within the normal framework. While, in many instances, it may be helpful to encourage him to do this as long as possible, it may also be of asistance to point out to him that this invalidism does not have to be an all or none affair. There may be areas where he can legitimately maintain his role, competing without special assistance of any kind with "normal" individuals. Acceptance of invalidism in one sphere need not necessarily bring about withdrawal into invalidism in all others.

A sympathetic awareness on the part of the counselor that the psychological distress caused by a symptom is not necessarily in direct proportion to the severity of the symptom itself will be of great help to the patient. Encouragement and understanding at a time when the first inroads are made in what was previously perfect functioning may be of greater value than attention directed to a symptom as a disabling factor which is so irrevocable as to leave the patient with no alternative but to attempt to adjust to it. As Goldstein *(12)* pointed out in his studies many years ago, partially defective vision may be more distressing than total blindness. The patient, therefore, who expresses concern over a barely perceptible objective change in function may be facing a psychological reorientation with considerable magnitude.

Another potential source of psychological stress to the patient where the counselor may be extremely helpful by sympathetic

awareness are those occasions when the patient experiences for the first time circumstances over which he not only has no control but where it may even appear to him that some force "other than himself" is directing his life. Evidences of forced laughing and crying are bound to have an unusually distressing effect upon the patient. It is no longer he, himself, who has control over the situation and the impression which he will give to friends and family may be diametrically opposed to that which he wishes to convey. It will be helpful to such patients for a physician to discuss with them in some detail the objectivity or impersonal aspects of these symptoms and to try and reassure them that the immediate family is well aware of the arbitrary nature of these happenings. It is important for the patient to realize that the doctor knows that the patient may not have wanted to exhibit emotion in this way. It is important that the doctor so reassures him and that members of the family make it explicit to the patient that they are aware of this part of the illness. Loss of bladder control can, of course, be handled in a similar way.

The unpredictability or uncertainties in the course of multiple sclerosis will give rise to much anxiety unless tackled and brought into the open. It is often harder to adjust to the unknown than the known and this quality of unpredictability as to what he may expect or look forward to may be an undermining factor to a patient's morale.

Luckily there are such legitimately hopeful aspects in regard to possible remissions and it is not unfounded optimism to handle this particular source of distress from a positive angle. The recent statistical findings that the life-span of the multiple sclerotic does not differ radically from his neighbor might be an idea to introduce in this connection. Many patients may respond to the suggestion that multiple sclerotics are amongst the few persons for whom the clock may literally, at times, be put back, enabling them to do and experience things which they felt had passed them by forever. Better vision and greater manual dexterity occurring during a period of remission will allow a patient to recapture what he had given up for lost.

Whatever the method used to give a more positive slant to the inherent uncertainties in the disease, the point we are emphasizing is the potential source of distress can be met half-way by a physician who is aware of its psychological impact.

REFERENCES

1. Braceland, Francis J. and Giffin, Mary E.: *The Mental Changes Associated with Multiple Sclerosis*, Res. Nerv. Ment. Dis. Proc. (1948), 28, 450–455, 1950.

2. Rusk, Howard A.: *The Problems of Rehabilitation in Multiple Sclerosis,* Res. Nerv. Ment. Dis. Proc. (1948), 28, 595–597, 1950.
3. Grinker, Roy R., Ham, George C., Robbins, Fred P.: *Some Psychodynamic Factors in Multiple Sclerosis,* Res. Nerv. Ment. Dis. Proc. (1948), 28, 456–460, 1950.
4. Langworthy, Othello R.: *A Survey of the Maladjustment Problems in Multiple Sclerosis and the Possibilities of Psychotherapy,* Res. Nerv. Ment. Dis. Proc. (1948), 28, 598–611, 1950.
5. Brickner, Richard M. and Simons, Donald J.: *Emotional Stress in Relation to Attacks of Multiple Sclerosis,* Res. Nerv. Ment. Dis. Proc. (1948), 28, 143–149, 1950.
6. Beck, Sam, Res. Nerv. Ment. Dis. Proc. (1948), 28, 458, 1950.
7. Burgemeister and Tallman, *Rorschach Patterns in Multiple Sclerosis,* Rorschach Research Exchange, Vol. IX, No. 3, Rorschach Institute, Inc., March 1944, 111-123.
8. Harrower, M. R. and Kraus, Jane, *Psychological Studies on Patients with Multiple Sclerosis,* A.M.A. Archives of Neurology and Psychiatry, Vol. 66, July 1951, 44–57.
9. Canter, Ph. D., Aaron H., Chief Clinical Psychologist, Veterans Administration, Phoenix, Ariz., excerpt from personal communication: "In multiple sclerosis there appears to be an impairment of intellectual and emotional functioning which can be objectively measured by means of psychological tests. This psychological impairment is progressive and can best be measured by repeated psychological examinations. This impairment and loss of capacity apparently parallels neurologic changes in the degree of clinical-neurological impairment. Generally, the most striking psychological loss is, in ability to analyze and synthesize abstract problems. Furthermore, there is a loss in learning ability, psychomotor coordination and speed as well as some increase in irritability and emotional instability."
10. The "organic personality," as reflected by the Rorschach test, is perhaps the only stereotyped, uniform or "typical" personality picture that has been recorded. The uniformity of the "organic" patient, as reflected in the test findings, however, appears to be due to the fact that in these cases so much of the individual personality, its idiosyncracies, special assets and personal problems, is "blacked out" as a result of this cerebral pathology, so that what remains is a bare skeleton structure which is remarkably similar from patient to patient.(10a, 10b, 10c)

10a. Rorschach, H.: *Psychodiagnostik,* ed. 2, Bern, Hans Huber, 1932.
10b. Piotrowski, Z.: *The Rorschach Inkblot Method in Organic Disturbances of the Central Nervous System,* J. Nerv. & Ment. Dis. 86:525-537, 1937.
10c. Harrower-Erickson, M. R.: *Personality Changes Accompanying Cerebral Lesions: I. Rorschach Studies of Patients with Cerebral Tumors,* A.M.A. Archives of Neurology and Psychiatry, May 1940, Vol. 43, 859–890.

11. Barker, Roger G., Wright, Beatrice A., and Gonick, Mollie R.: *Adjustment to Physical Handicap and Illness: A Survey of the Social Psychology of Physique and Disability,* Bulletin No. 55, New York Social Science Research Council, 1946.
12. Goldstein, K.: *The Organism: A Holistic Approach to Biology Derived from Pathological Data in Man,* New York, American Book Company, 1939.

ACCEPTANCE OF LOSS—AMPUTATIONS[1]

Tamara Dembo, Gloria Ladieu-Leviton, and Beatrice A. Wright

THE MEANING OF LOSS

A person who loses an arm or leg, or his original facial appearance experiences not only physical damage but a psychological loss. It is the meaning of this loss to the person which to a large extent determines the adjustment of the person to his new physical state.

Non-injured people may look upon the person who has a damaged appearance either as an "unfortunate person" or as a "person who has difficulties." To look upon a person as an "unfortunate" means to devaluate him. This devaluation hurts the injured. The non-injured who looks upon an injured as a "person who has difficulties" and suffers from them may genuinely sympathize with the injured and his help will be accepted by the injured if and when the injured feels it necessary.[2]

The injured feels the loss of status as "a normal being" in the devaluative attitude of the "fortunate" to the "unfortunate." But above all he may devaluate himself. The injured who has been previously a non-injured may have perceived physical injuries as misfortunes. If this has been the case, he may continue to carry his values and evaluations after the physical injury was incurred. Thus he himself may feel that he is not as good a human being as the non-injured.

The content of personal loss as felt by the injured (in the case of a leg amputee) may be conveyed in the following: The leg which was a part of me and like the other is now detached from me. With it I felt free to move, to jump, to run, to play. I could move it, move with it; it moved me. I will be hampered. I will

[1] This chapter is a part of a final report of the project "Social-Psychological Rehabilitation of the Physically Handicapped," submitted to the Army Medical Research and Develoment Board of the Office of the Surgeon General, War Department on April 1, 1948. The report was entitled "Adjustment to Misfortune."

The work was done partially under a contract between Stanford University and the Office of Scientific Research and Development recommended by the Committee on Medical Research, partially under a contract between Stanford University and the Army Medical Research and Development Board of the Office of the Surgeon General, War Department.

[2] These statements are based upon material described in detail in the above mentioned report. A detailed description of method of investigation which are pertinent to the acceptance of loss by the injured can also be found in the report. Here, it might suffice to mention that intensive interviews served as the main source. 177 injured participated as subjects, the predominant majority of whom were veterans of World War II. In the predominant majority of cases the subjects incurred amputations, or facial disfigurements requiring extensive plastic surgery. At the time of the investigation most of the subjects were not yet discharged from hospitals; however, they had considerable contact with non-injured people in the community.

not be able to climb a mountain (even though I never climbed one before). I won't be able to dance or fight as well as before. I won't be able to take a job that requires standing for hours. The prosthesis can fail. I can slip and fall. I have to take care of the stump. When I look in the mirror I won't see a whole man, I will have to get used to seeing myself this way. I can't bound out of bed in an emergency. When I move I will think—is it worth the inconvenience and effort of getting up? So much that I will do would have been so much easier; in a shorter time I could have done so much more. I will always be less able than I would have been. I was a better man, when I had my leg and amounted to much more than now. I will never be what I wish I were, and ought to be—had I the leg.

In suffering from social loss, the individual suffers as a member of a group. He feels that he is not accepted as equally worthy. Other values which the group can offer, such as companionship, are made inaccessible to him, since he feels that he is discouraged from entering certain group relationships.

The injured describe the social loss in these terms: I will be considered inferior by others. They feel that I can't contribute my fair share. I will be regarded as a burden. They won't want to associate with me. They might stand my presence but not accept me as they would a noninjured man.[3] Girls won't want to go out with me. People will be repulsed by the sight of me. I would have to be as good as the noninjured, but I am not as good as he is.

One could consider each of these difficulties and see how each in turn could be overcome. This obviously is an endless task, for one could continue to enumerate specific sufferings involved in personal and social loss. Instead, it is more meaningful to try to see whether there are not some conditions common to diverse difficulties. Understanding of these conditions is actually a first step toward solving problems of adjustment, for only when they are clearly specified can we tell what it is which must be changed, and only then are we able to get some insights regarding the state to which it would be desirable to change and how to produce the change.

The desired state which we call "acceptance of loss" does not mean becoming reconciled to the unfortunate state. Instead, acceptance of loss means overcoming the feeling that one is an unfortunate person—a process of value change. Before value changes will be discussed, however, we will describe those attempts of the injured man to adjust which seem to be promising to him, but which not only do not basically overcome the difficulties, but even create new ones.

[3] Adler, D., Ladieu, G., and Dembo, T. "Studies in Adjustment to Visible Injuries: Social Acceptance of the Injured." *Journal of Social Issues*, 1948, 55–61.

MAINTAINING THE NON-INJURED STANDARD

The way in which the injured person tries to overcome difficulties is determined by the fact that his values are those of a noninjured person and may therefore imply devaluation of himself. The blow which damaged a part of his body did not at the same time lead to changes within his value system.[4] The injured may continue to maintain that the noninjured position is *the* standard and direct efforts toward reaching it. He may cling to the belief that the way to overcome his difficulties is to be, in his own eyes and in the eyes of others, a noninjured person. To achieve the end of being considered a noninjured person, he uses all means available to him.

Realistic attempts to achieve the non-injured standard

The realistic means to be like the noninjured which are used by the injured men are strenuous efforts to perform certain tasks independently, and to equal or surpass the success of the noninjured in certain roles. These attempts can be considered realistic because in certain limited ways they are successful. The injured can equal or surpass the noninjured performance in particular tasks or in particular roles. But, *if the sheer fact of being an injured person is a difference which makes a difference to the injured man, that is, if the noninjured remains the wished for ideal, no matter how often he does as well or better than the noninjured, he will still devaluate himself as an imperfect noninjured person.* Thus in trying to do as well as a noninjured person or even doing as well as the noninjured he does not convince anyone, either himself or others, who believe that the injury is a devaluating misfortune. Further his attempts lead to additional difficulties.

In their efforts to be noninjured, the injured impose unnecessary strain upon themselves. Whereas the noninjured person often readily accepts help when it is more convenient than to perform a task alone, the injured person tends to be reluctant to accept help with a physical task if the help is not absolutely necessary.[5] Thus, the injured man says:

I wouldn't accept help except where absolutely necessary. Offers of help get me down unless I were in a real jam. (Interviewer: What do you mean by absolutely necessary?) Oh, something like an earthquake out here where I couldn't get my hands on my crutches in time.

You'd like to be a lot more independent than you were before. If somebody opened the door before, you never paid attention to it but they do it now and you notice it.

---

[4] The study of congenital cases, or those injured in early childhood, would be important for understanding problems of acceptance of loss. Do these people differ in their value systems from those who were injured later in life? It would also be important to study the value structure of those who experienced gain after loss, who changed from a handicapped to a nonhandicapped position (e.g., cured cardiac cases and arrested tuberculosis cases).

[5] Ladieu, G., Hanfmann, E., and Dembo, T., "Studies in Adjustment to Visible Injuries: Evaluation of Help by the Injured." *Journal of Abnor. and Soc. Psychol.* 42, 1947, 169–192.

In order to explain why the injured, in striving to be and behave like a noninjured person, is led to impose greater hardships upon himself, we must take into account that "help is necessary" has a double connotation. It means "without help I will not reach a desired goal" and "I am not able." The latter implies comparison of one's own ability with that of another. "You cannot do it, but I can" is in our ability-minded society, a most unwelcome comparison. For the injured person who wishes to be noninjured, the ability-comparison aspect of help has a greater weight than for the noninjured and he wishes to deny that he *needs* to be helped. The necessity of the goal, therefore, has to be greater for the injured in order to overcome the resistance against being helped. This we expect could be shown by the following experiment:

A scale can be constructed of the necessity of help, one end of which indicates "help as a pure matter of convenience" (i e., no great effort would be required to perform the activity alone, but there is someone willing to share the effort) and the other end indicates "help as absolutely necessary" (i. e., an important goal would be completely inaccessible without the assistance of another). We can then determine the points at which help will be welcomed by injured and noninjured persons. Judging from the data we have, we would expect that the point of acceptance of help by those injured who wish to be as much like the noninjured as possible will not on the average coincide with that chosen by the average of the noninjured subjects, but will be nearer to the point of "help as absolutely necessary." Thus, when the injured person in speaking about help says, "Treat me like anyone else," he may not mean, "Give me as much help as you would a noninjured person for whom a task is inconvenient." Instead he may mean, "Do not help me because a noninjured person would not require help in this situation."

Denial of the injury

The injured may attempt to deny that an injury makes any difference whatsoever, either to the person himself or to anyone else. The injured man should forget, and others should forget. If both would forget there would be no difficulties.

(Interviewer: How should a person go about adjusting?)

I think he should forget about it.

Another injured says:

People should just forget what happened.

A third:

If he doesn't think of it, it won't bother him.

Two reasons seem to support the belief in this literal kind of forgetting. First of all, in the highly emotional striving for adjustment, the aim and the means are not sharply distinguished.

"I wish my injury would be forgotten and it can be done by actual forgetting," merge together in an emotional state which leads to primitivization in thinking. Secondly, the injured man does many things without feeling like an injured person. When he is in a bar, reading the funnies, discussing political affairs, etc., the thought that he is an injured person may not enter. In such situations he escapes the painful devaluative feelings associated with his loss. Temporary forgetting which the injured man does experience may make him believe that he can forget the injury most of the time.

Temporary forgetting may not altogether be valueless in the process of adjustment. It may provide much needed emotional relief before one can again become involved with the problems brought about by other adjustment attempts. Consideration of problems connected with the injury goes on on the emotional level with such intensity that temporary escape may be welcomed as a psychological rest from too much strain on the organism.[6]

But the injured person realizes in time that it is not only hard to forget what exists, but also so much happens which may "remind." Thus an injured man who said:

You can forget you are hurt if everybody ignores it, a few sentences later complained:

If you go out you can hardly go through a day without people asking you about it.

And reminding is not only due to the incorrigibility of the noninjured. A person who has a prosthesis has to take off and put on the prosthesis; the injured man often has to enter situations in which other people are handicapped, and again he will be reminded. So that even if one could willfully forget, one would be constantly reminded by new occurrences. The wish and the impossibility of forgetting are clearly brought out in this statement:

More or less forget about it is the best thing: but how are you going to forget when everybody keeps reminding you of it? I guess in time to come they won't be half as curious and will accept it . . . I don't think about it unless someone speaks about it, or if I think about something I want to do and then I think, 'Hell, I can't do that.' You shouldn't worry about it, but you can't forget that one moment when you got hit. But it's about the future that you think.

The belief in the possibility of literal forgetting gives way, therefore, to the feeling that the injured and noninjured should behave toward each other *as if* the injury did not exist:

I'd just act normal, as if nothing had happened.

The happy and perfect thing is to have it ignored completely.

[6] Activities which segregate us sufficiently from emotionally intense conflicting and frustrating contents seem to give us the possibility of recuperation. To shift at will to less emotionally intense situations, that is temporary forgetting, is a blessing and sign of psychological well being or health. When we are under strain, we seem to need it more, but frequently the shift is more difficult.

(Forgetting) that's hardly possible but we can all make believe. As is evident, such behavior does not really mean that the man will be considered noninjured. On the contrary, it is implicit in acting "as if" that he actually is not noninjured.

Like in the case of temporary forgetting which has some positive aspects, so also "as if" behavior has its assets though they be limited. The injury may be considered a personal matter, and "as if" behavior serves the purpose of keeping others from intrusion into privacy. Thus, under certain circumstances, "as if" behavior may be appropriate, especially where strangers are involved.

"As if" behavior as well as attempts to forget bring about difficulties in the relationships between the injured and noninjured. When the participants in a relationship are close persons, persistent role playing has negative effects. First, there will be a constant strain if each feels that he can never relax his guard. But worse than that; it is characteristic of close relationships for the partners to share their feelings. If the formal surface behavior which is appropriate to stranger relationships persists, they will begin to feel like strangers to each other. Closeness, which is built upon easy communication, sharing of feelings, the warmth of sympathetic interactions, gives way to estrangement. Basic understanding between the persons cannot be reached. The injured person will continue to feel that he is *not understood* and *cannot be understood.*[7] Again, as in the case of help (page 5), the injured deviates from the actual behavior of the noninjured, for the noninjured does not ordinarily impose such restraint upon himself, and does not in time of stress deprive himself of the comfort of sympathy.

SOME VALUE CHANGES INVOLVED IN ACCEPTANCE OF LOSS

Denial that a difference exists, as we have seen, not only does not overcome difficulties; it may actually create new ones. But, above all, it hinders basic adjustment, for admission that a difference exists is a prerequisite for the further step of accepting the difference as nondevaluating.

Most important for the process which we have called acceptance of loss is a process of revaluation. This process is too complicated to permit us at the present time to make more than a few statements regarding either observed changes or possible ones. We present the advances we have made in understanding it as an incentive to further study.

The first problem is why revaluation should be so difficult for the injured. Why in the face of persistent difficulties do they

[7] White, R. K., Wright, B. A., Dembo, T., "Studies in Adjustment to Visible Injuries: Evaluation of Curiosity by the Injured." *J. of Abnor. and Soc. Psychol.*, 43, 1948, 13–28.

cling so strongly to those evaluations which hurt them? Two reasons may be mentioned. First, they seem to feel that since abnormality of the body connotes psychological deviation or even mental abnormality to some people, they will strengthen this impression should they maintain values which differ from the non-injured viewpoints and ideals. Second, and most important is the fact that to produce value changes on the emotional level is at least as difficult as to change the needs of the person. Though one may easily convince a person intellectually of the advantage of adhering to different values, their actual integration within the value system of the person is bound to meet resistances. This is understandable if we consider that single values are not independent from other values of the person so that one change in the value system means the necessity of making changes in other values or giving them up.

Yet value change is paramount in the case of an injured who devaluates himself and we will describe two types of changes which are necessary and possible: (1) Devaluation will be diminished to the extent that the values lost are felt to be non-essential for the evaluation *of the person* when the scope of values is enlarged to include other personal characteristics than the injury incurred. (2) Devaluation will be overcome when the values lost are regarded as asset values rather than as comparative values.

Enlargement of scope of values

We shall describe two examples in which enlargement of scope of values takes place.

1. *The state of all-inclusive suffering.*—For the person to see the values lost in a larger setting of other values is of special importance in the case where he feels he has nothing more for which to live. The problem then is to bring about the emotional realization of the existence of other values.

Some injured subjects have admitted that in the initial stages their suffering was so acute, the experience of loss (of both personal and social values) so overpowering, that the idea of suicide presented itself. In such a state the loss seems to pervade all areas of the person's life. Whatever he thinks about, whatever he does, he is troubled, pained, and distressed. There is no differentiation between areas of the person which are and are not injury connected. All that matters are the values affected by the injury and they are lost. No other values in life are important or even existent.

There are two characteristics of such a state which make the thought of suicide likely. First, the narrowed perception to only one single area which is characterized by suffering means complete devaluation of one's whole life. Moreover, the suffering seems to

be boundless not only in extent but also in time. If no other area is seen, then there is nothing to which one can hope to turn. The only hope of escaping the loss and suffering is to leave life altogether.[8]

Fortunately such black depression and despair does not persist in most of the injured who experienced it. There is a gap in our knowledge as to just how it is overcome but what is necessary is the perception of something besides suffering in life. It may be that when the decision to commit suicide is made and only carrying out of the plan remains, the injured may look back at what will be given up: suffering *and life.* When fighting against living further is no longer necessary, as it was before the decison was reached, life itself may suddenly be seen as a value. At such a moment this unusual experience of something else than suffering may be sufficient to give the first hold, and with it the feeling of strength and hope. These suddenly arising feelings we have called the stamina experience (so distinctive and easy to recognize when encountered, although difficult to convey, that it was named long before its place in problems of value change was seen).

Those who have had the stamina experience know that life is worth living again. They feel that "they have been all the way down to the last door and come back"; that no other enemy will ever be so formidable. The realization that the essential value of life is regained means that the unbearability of the situation has been overcome. It means that the person is able to attend to what life holds for him, to begin to appreciate the fullness of meaning of having what he does have. As one very severely injured man puts it:

> You gradually see that there is more to life than you thought possible * * * They all think at the beginning that they are no good. Why, there was a fellow here the other night who had a couple of fingers missing and you would think there was nothing worse under the sun. And I said to him, "Well, son, you still have a pair of arms, a good pair of legs, a good pair of eyes. Why, just think of it! I would be glad to have a good pair of anything."

Another injured man stated:

> I have a sharper appreciation of things I valued before—health, happiness, comfort, friendship; I am a hedonist, I feel lucky for just being here.

---

[8] At the present state of knowledge we are not able to state whether those who consider or commit suicide after acquisition of a physical injury have had pronounced neurotic trends which prevent them from standing the additional stress of the unfortunate position, or whether an otherwise stable individual but with an extreme evaluation of the fortunate position may consider or commit it.

Also we may ask whether the extreme evaluation of body-whole and body-beautiful is not itself an expression of instability or strong neurotic trends.

There was a time, not so long ago, when little attention was paid to the problem of the good, quiet child; only the boisterous child was considered a problem. Similarly, the high self-esteem and satisfaction with one's appearance or any other fortunate position is considered healthy and only lack of self-esteem is felt to be a problem. We feel that high self-esteem on the basis of comparison with the unfortunate position of others may be an unhealthy and dangerous state of unpreparedness to meet situations of loss or misfortune. Little attention is paid from the mental health standpoint to preparedness for psychological suffering. Attitudes to misfortune as any other emotional attitudes, need educational and therapeutic guidance.

And still another calls it a "conversion to life":

Before when I would try to analyze myself I would come against a blank wall. For seven months I don't think half the time I knew what was going on * * * some things have become more important that before seemed so unimportant, and consequently less important the other things that seemed so important before * * * I never had a clear conception of what it means to live. In other words I have come to the conclusion that most people go through life and never accomplish anything. They just live. They eat and sleep * * * Cows I call them * * * They just grow and disintegrate * * * I feel that if I don't make a contribution what's the use of having come back alive. I don't want to waste my life now * * * (Interviewer: It's almost a religious experience.) Well, it's a complete change * * * a conversion to life. Religion is another thing * * * You have got to dance, to laugh, and have your fun, but also you can put your aims on a higher plane.

The injured frequently maintain that "it is up to the man himself" to overcome the depression in the acute suffering stage. In other words, perception by an outsider that something other than suffering exists, is felt to be unconvincing to one who is within the area of loss which seems all pervading. Some injured therefore state that the depressed one should be left alone. Others, however, try to overcome what they call "self-pity" in a friend by scolding and ridicule:

That's all within the man himself. I have seen them when they haven't anything to live for after the injury. (One guy) wasn't eating, feeling so sorry for himself. I called him everything but a gentleman. I called him everything I could think of. After that he started eating.

The fact that the friend is hurt and feels these insults to his manliness means that he discovers at least pride as a remaining value. As different as the overcoming of depression by oneself or with this sort of "help" may be, they have in common the finding of a value at a time when every value was lost.

The method of hurting the injured man during depression should not be given as a recommendation to the *noninjured.* Such behavior on the part of the noninjured would only intensify the feeling of being devaluated. When an *injured* person uses this method in dealing with another injured man, the latter feels "He is not devaluating me for being injured but for being unmanly." At the same time an injured friend is there as an example that one can be injured without feeling that everything has been shattered.

What the conditions are which give the values of manliness, of pride, the power to restructure the meaning of the lost values so that they no longer dominate the person's life needs further investigation. Though the lost values may retain their importance, the stamina experience brings with it the strength and hope which make the injured person feel that he is ready to live further *in spite* of difficulties. An important condition towards overcoming devaluation is thereby realized. The injured state is no

longer regarded as an unadjustable one. At least in the sense of being able to make a go of it in spite of difficulties the person feels he can adjust. But, though the worst consequences of loss may be avoided through enlargement of scope of values, it does not mean that all suffering is overcome. It does mean, however, that the person has been faced with the necessity for revaluation. He has had to see the place of the lost values in his whole value system. In this way he is a step ahead; for adjustment, when the person is not in a depressed state, also entails value changes.

2. *The problem of appearance.*—A person may be bothered by his appearance because he feels that it detracts from his attractiveness to others. The injured person may believe, for example, that when someone looks at him, his amputated leg or scar is seen and nothing else matters. We propose that devaluation due to damaged appearance will be diminished to the extent that *surface appearance* is felt to be nonessential for the evaluation of the person when the scope of values is enlarged so that surface appearance is included within *personality appearance.* Actually, the perception of the appearance itself may then change so that it is seen in the light of the personality. Thus, whatever the objective condition of the surface appearance may be, when one reacts positively to the person, the appearance may be felt to be attractive, and vice versa.

Many people quite naturally judge a person's attractiveness in terms of his personality. Under certain circumstances it seems that the influence of personality recedes to the background while that of surface appearance becomes the focus of attention. In the case of the injured, primacy of surface appearance leads to devaluation so that the integration of surface appearance within the context of personality should diminish suffering. The conditions which determine the primacy of personality of surface appearance is a problem requiring special investigation.

Change from comparative values to asset values.

Two situations involving a change from comparative to asset values will be described.

1. *The problem of mourning.*—A person may mourn his loss because the personal satisfactions which the object of loss gave him in the past are now denied him. For example, the injured man may feel: With the old leg I was free to move, to jump, to run, to play. I could move it, move with it; it moved me. Overcoming of mourning does not require a lowering of the level of aspiration (being satisfied with less) nor does it require depreciating the object of loss. What seems to be necessary to overcome mourning is a change in relationship to the object of loss.

In the case of loss of a person, the one bereaved must recognize

212229°—52——7

that further *interactions* with the person are impossible; that a *relationship* nevertheless can still persist. Some of the values which they had formerly shared, and which, in his first grief, the bereaved may have seen as dependent upon the presence of the lost one, can be maintained. He can do what the loved one would have done and wanted him to do. He can bring up his children to observe the traditions which the loved one had begun. Then he can look back upon the past with tenderness rather than rejecting any painful reminders of it.

A similar change in regard to the lost object is necessary in the case of the injured. The injured man has to feel that the *most essential* functions which the leg had formerly enabled him to perform can be carried on by the stump and the prosthesis. He has to feel that he is still an intact organism, a whole man. A change of feeling has to take place from that expressed by one subject:

> What does she see when she comes in—half a man lying on the bed * * *

to that expressed by another:

> I am a long way from worthless. I am still a good man without the leg.

Such a viewpoint implies that one turns to the satisfactions existing in the present and does not derive essential satisfactions or dissatisfactions from comparison with the noninjured state in the past. It means that, e.g., a leg as a value has changed from a comparative value (without which one is inferior) to an asset-value (a good thing when it is present). If such a change takes place on the emotional level, the past can be remembered without pain but with tenderness, with that tenderness which old people not infrequently feel toward the reminiscences of their youth. The two states of the person before and after the change can be described as, first, "I am nothing but an incomplete noninjured person who has always to mourn his loss," and second, "*I am as I am*, and though I don't have all the possible assets which can be imagined, my life is full."

2. *The problem of disability.*—The change from comparative to asset values is not only indicated when the person suffers because of personal loss as described above, but also when he suffers because of loss which is socially evaluated. As an example, we shall consider the disability aspect of the injury.

To call someone disabled implies that *performance* determines the evaluation of the person. In our society, people are frequently compared with each other on the basis of their achievements. Schools, for example, are predominantly influenced by the achievement or product ideology. High grades are not given to the one who worked hardest but to the one who performed best. Under certain circumstances, of two persons who reached the same

performance level, the one who did so with greater ease is considered the better. He is seen as potentially a better producer than the one who had to work harder. Thus, effort is not only considered a positive value, but paradoxically, a liability.

If one would follow the maxim which also exists in our society, namely, "All that is expected of you is that you do your best," it would mean that the person would not be compared with others in regard to ability; it would mean that only his own present state matters and thus that it does not matter whether he lost or lacks ability. Actually, one wishes to say, a person does not lack ability; he can only have it. In everyday life we do evaluate as equally good citizens those who pay taxes according to their financial state. The injured who applies himself with effort contributes the most that he can. Though the unsatisfactory physical tools of his body may have limited his production, his personal contributions are at the maximum. As a *person* he is not different from the noninjured.

Effort as a basis for evaluation is observed in the injured. A bilateral amputee stated:

> Sorry [compassion] is for someone who does his damnedest but still he is physically unable to accomplish what he does in the best way. Pity is for someone you feel like he isn't putting everything into it. Not up to standard, up to what you judge by. Maybe I am wrong but that's the way I think of it.

This man expresses the thought that, in addition to the scale of achievement ("accomplishing what one does in the best way") there is another scale of effort ("doing one's damnedest," "putting everything into it"), and that devaluation ("pity") should be reserved for those who are lower on the effort scale. Only those who do not put forth sufficient effort should be judged as "not up to standard".

The reader may wonder why we bring up the change from one comparative value (achievement) to what appears to be just another comparative value (effort) when a change from comparative values to asset values is desired. It is true that effort, in this case, is seen as a comparative value, but when effort becomes the yardstick by which a person judges himself, then, the *values lost* are changed from comparative to asset values. Greater ability or achievement becomes a good thing when it exists, but not a loss, nor a lack, nor a disturbance when it is absent. Such a change is but one among others which are required for the person to perceive his existing state as valuable rather than as a crippled noninjured state.

These differing evaluations of one's existing state have important consequences. The particular problem which we should like to discuss as an example is the effect of the two evaluations on the readiness of the person to improve wherever realistic

improvements are possible and on his persistence in bettering his state.

It would seem at first glance that maintaining the noninjured state as the standard would have the advantage of leading the injured to increase his efforts, for example in dealing with the physical environment. The injured would desire the best prosthesis, try to improve in using it, and learn as many skills as he could in order to be able to perform the physical tasks which the noninjured can perform. However, the desire to be able to handle the physical world does not only stem from the wish to be as much like the noninjured as possible. We even doubt that the desire to be as good as the noninjured is helpful. The injured person who emotionally desires to be noninjured will see even objective improvement over previous performance as still falling short of the goal and hence failure. The same objective improvement can be seen as success (in comparison with my recent performance) or failure (in comparison with the noninjured). The following pair of examples will illustrate the different feelings resulting from the different evaluations of one's present state. In the first "always wondering whether I could have done better" indicates feeling of failure, in the second, "enjoying learning over again" a feeling of success:

> We'll be satisfied with less but there'll always be a little bit of doubt as to whether we could have done a little bit better without it. Maybe I'll be able again to play a good game of golf, but I'll always wonder whether I could have done better * * * In some part of your mind you just have to check off the fact that you're missing something extremely valuable.
>
> The more you learn to use it the less it bothers you. If it's just hanging, it will * * * the more I learned the better off I was * * * I figured it was gone so I might as well see what to do about it * * * I enjoy learning to do things over again. It offers a challenge to you. I think—what's the best way—before I start fooling around.

It seems reasonable to expect that if a person feels he is improving he will hopefully continue. If he is constantly unsuccessful in his attempts to reach the desired goal and yet feels he has to reach it, forces away from the unreachable goal and disruptive emotional effects will occur in this frustrating situation.[9]

Our discussion is of value for an important practical problem of the amputee. In trying out a new, technically improved prosthesis some of the injured feel that it is an improvement and others do not. Besides the question of the physical fitness of the prosthesis for the individual, psychological conditions leading to the different reactions are important. We feel that it would be promising to study whether those injured who are dominated by the noninjured standard are more easily dissatisfied with the new pros-

[9] Dembo, Tamara, *Der Aerger als. dynamisches Problem, Psychol. Forsch.* 1931, *15*, 1–144.

thesis than those who consider their post-injury state as valuable. We predict that the former group will more easily be disappointed because, in comparison with the noninjured standard, the results of the prosthesis can only be seen as a failure. The latter group, however, will see any actual improvement as such and consequently will be encouraged to continue using the prosthesis. Those who maintain the noninjured as their standard require psychological adjustment before they will be able to accept an objective improvement as such, rather than as a new indication of the unreachability of the noninjured state. We venture to say that only if the post-injury state is taken by the subject as a starting point can he make valid judgments as to the advantages of the technically improved prosthesis.

CONCLUSIONS CONCERNING ACCEPTANCE OF LOSS BY THE INJURED

Acceptance of loss is seen as involving changes in the value structure of the person. We have pointed out only some of the changes which may lead to acceptance of loss; clearly there are others. Our statements have to be taken as suggestions for further research rather than at their face value. We discussed four kinds of situations:

a. overcoming of all-inclusive suffering
b. overcoming devaluation produced by damage to appearance
c. overcoming mourning
d. overcoming the devaluative meaning of disability.

The value change involved in (a) and (b) can be seen as one in which enlargement of the scope of values takes place. In the case of all-inclusive suffering, enlargement of the scope of values is the first step toward the possibility of acceptance of loss since the main problem here is to regain, psychologically, other values than those lost. In the case of devaluating appearance, enlargement as such is not in itself an asset unless with the enlarged scope of values the values lost are seen as relatively nonessential. In both cases, the person will maintain the noninjured standard and regard the values lost as comparative values. Thus, the person may still devaluate himself.

The value change involved in (c) and (d) can be seen as one in which the values lost are regarded as asset values rather than comparative values. In this case, the person feels that his own state is a worthy one. When he turns to what he has and can reach, instead of selecting unreachable states as a standard, life can be seen to offer more than he can possibly avail himself of. He frees himself from the devaluating comparisons with a ghost ideal of a different but actually not a better person, the noninjured. Thus, acceptance of loss seems to be more fully realized through the second type of value change.

ACCEPTANCE OF LOSS AND THE REACTION OF THE INJURED TO DEVALUATIVE FEELINGS IN THE NON-INJURED

The injured person who has personally accepted his loss will feel differently about the discriminatory attitudes of the noninjured from the way the person feels who has not accepted his loss. The social loss of the injured person, his feelings of nonacceptance as a group member, has a basis in reality. Whether or not the person has adjusted to his loss, therefore, he will experience difficulties in his relationships with noninjured people. But the reaction in the two cases will be very different.

Where the person devaluates himself because of his loss, he will feel that his nonacceptance by others is largely justified. He will agree that a noninjured person is more valuable, more likeable, more worthy. He will suffer keenly that he happens to be on the short end of this relationship, but he will see it as an unavoidable and natural fact, to be supported as morally valid. He will feel that no one can change this state of affairs, that one can perhaps try to behave "as if" he were not injured, but the emotonal devaluation of him must prevail.

If the injured person has accepted his loss, on the other hand, he will not devaluate himself. He will consider himself an equally worthy member of a noninjured group and thus feel that he should be fully accepted by other members of the group and have access to the values which the group can offer. He will see that it is the maladjustment of the noninjured toward injuries which leads them to devaluate and reject him, which hinders him from having access to the values of the group. He will see that the source of the difficulties is not in the injured, nor that the devaluation of the injured is "natural," "lawful," rather he will locate it in the maladjustment of the noninjured.

A considerable part of the suffering due to nonacceptance by others is thereby removed: because the negative evaluations of others are seen as unwarranted, because the injured person does not blame himself, they hurt less. Instead, the person who holds them may in turn be devaluated and seen as ignorant or prejudiced. This counter-devaluation may also serve to diminish suffering from social loss.

Whereas the maladjusted injured person wishes to be accepted by the noninjured though he feels he ought not to be accepted, the adjusted injured person will care less to associate with those whose values he does not share or respect. The adjusted injured person gains a considerable degree of emotional independence and freedom from the noninjured.

This does not mean that the injured person does not and need not care about how the noninjured receive him. Even though he may

not care to associate with a given person, he does wish to maintain close relationships with others. Moreover, in the non-injured dominated world, it is often the noninjured who determine whether the injured person can have access to important values such as jobs and group memberships of many kinds. Thus it is of vital interest to the injured that the noninjured become adjusted to injuries.

ACCEPTANCE OF LOSS BY THE NON-INJURED

Acceptance of loss is of great importance not only to the injured. Persons close to the injured, that is those who are in the position of sharers, as well as the large number of noninjured who have little to do with injured people have much to gain from healthy attitudes toward injuries.

The sharer suffers, not only because the injured person suffers (sympathy) but because he also experiences a loss (personal and social loss). A wife may feel the loss of her husband's leg just as personally, just as deeply, as the husband himself. The sharer, therefore, has to accept the loss, just as does the injured person, before suffering may be overcome. It is of extraordinary practical importance for the injured man to realize that his closest sharers, his wife and mother, cannot be expected to accept the loss immediately. Just as he has to go through the struggle to accept the loss, so does the sharer.

For the nonsharer, adjusted attitudes toward injuries do much to free him from anxieties regarding bodily harm. He still will continue to regard body-whole as a value, but as an asset value and not as a comparative value. The loss, then, is regarded as an adjustable state and not a catastrophe. Consequently, in threatening situations, he would not become careless about his safety, but the anxiety would be reduced to realistic fear.

Since acceptance of loss has adjustive significance for all persons, the question arises as to how the noninjured may be brought to face it as a problem. The need to attempt to accept the loss exists in noninjured sharers for they also experience a loss. But what about nonsharers? In general they do not feel the necessity of imposing upon themselves the problem of adjusting to injuries. They may feel uncomfortable in the prescence of an injured person, they may devaluate the injured or wish to diminish his suffering, but they do not see the suffering as "their problem." Not only do they feel that real acceptance of this kind of loss is extremely difficult, but what is more important they do not feel that they should try to accept it. The general attitude may be described as "problems of visible injuries are special problems—they do not actually concern me."

At least two groups of people not in the position of sharing a loss

with an injured person may consider more closely their feelings toward injuries. First, there are people who are bothered by social justice. When considering injured people, they may question their own attitudes, since negative feelings toward a suffering part of humanity are regarded as unjust and intolerable. As they puzzle, they may discover their own basic non-acceptance of injuries and struggle to see the loss as an adjustable and acceptable state. The second group consists of those people who have a general need for self-adjustment in whatever area anxiety is felt. Just as a person who is frightened when climbing a mountain may wish to ascend again in order to overcome the fear, so may a person who feels uneasy about body welfare wish to meet the problem of non-acceptance of loss.

PSYCHOLOGICAL ASPECTS OF TUBERCULOSIS

Daniel H. Harris

MEDICAL ASPECTS OF TUBERCULOSIS [1]

Causes and incidence

The disease called tuberculosis is caused by a germ known as the tubercle bacillus, whenever the body's condition is such that the germ can multiply and do its destructive work in the bodily tissues and organs.

The germs live for hours in moist sputum outside the body, and may survive drying and freezing for long periods. They die after a few minutes in boiling water, and do not live long in sunlight or fresh air. But once they get a foothold in the body they can multiply very rapidly.

Tuberculosis can attack any part of the body, but pulmonary (lung) tuberculosis is by far the commonest form of the disease in human beings in this country, and this chapter will discuss only pulmonary tuberculosis.

Infection takes place in the great majority of cases by breathing in tubercle bacilli, whether in dust or in moist droplets. Lodged in the furthermost recesses of the lung, they can remain unmolested to produce the typical local lesions of tuberculosis when conditions are favorable.

Bacilli that are swallowed may also cause infection. These are subject to the chemical action of the digestive juices, and to mechanical action by which they are washed out of the body in the intestinal discharges; it requires larger numbers of bacilli to produce infection by swallowing than by inhalation.

The germ can be passed from one person to another in a number of ways. By far the most frequent mode of transmission is continued close contact with a person who has active tuberculosis. Such a person has living bacilli in the sputum and in the tiny droplets sprayed from the mouth and nose in coughing, sneezing, and even in laughing or talking forcibly. If anyone comes in contact with this spray, he may inhale the bacillus-loaded droplets. Kissing a person with active tuberculosis also is dangerous because the bacilli may be planted directly on the lips. The above are examples of what is called *direct contact.*

[1] Acknowledgment is made to John N. Hayes, M.D., Saranac Lake, N. Y., for assistance with this section.

Tubercle bacilli can also be spread by *indirect contact.* Since they can survive for long periods outside the body, infection can be acquired from anything which has been used by, or has come within range of the cough or expectoration of, tuberculous individuals. The variety of articles in common use which can serve to transmit bacilli is obviously very large. Such objects include eating utensils, wearing apparel, bed covering, rugs, furniture, towels, doorknobs, telephone transmitters, and so on. Also, when sputum dries and mixes with dust it can be lifted by air currents or raised by sweeping into the air of a room.

In addition to direct and indirect contact as illustrated above, infection may be transmitted through a third party or medium. For example, a father may step on tuberculous sputum in the street and carry the infection home by walking over the floor on which his children are playing. Or, a cow may have tuberculosis and the bacilli may get in her milk and infect those who drink it, unless it is pasteurized.

There are about 100,000 new known cases of tuberculosis every year in the United States, or about 67 per 100,000 of population. In 1950 the death rate from tuberculosis in the United States was 22.2 per 100,000, a decline of 89 percent from 1900, when the death rate was 194.4 per 100,000. In 1900, tuberculosis was the leading cause of death in the United States; in 1950 it still killed 34,000 people, more than any other single infectious or parasitic disease; and it is still the leading cause of death for people between the ages of 20 and 40, and so cannot be considered negligible by any means.

Symptoms and diagnosis

The more common first symptoms of tuberculosis are: tiredness, loss of weight, night sweats, afternoon fever, indigestion, and a cough or hoarseness that hangs on. Less often, the first alarm signal is the spitting up of blood, which may be severe or very slight in amount. Sharp pain in the chest is sometimes the first warning sign. Or there may be none of these, but some other departure from good health; such as disturbed sleep, nervousness, or a general "run-down" condition. Any of these justifies examination by a physician, since it may be an indication of tuberculosis.

Diagnosis of the existence and extent of active tuberculous infection is made by laboratory analysis of sputum or other body fluids, and by X-ray. The X-ray method of diagnosing tuberculosis is the more important and widely used. Evidence of tuberculosis of the lungs can be disclosed by X-rays *before symptoms or clinical signs are noticed.* The X-ray has therefore made possible a more effective control program, as it often discloses the early

case before it becomes infectious and at a time when treatment is most successful.

Treatment

Rest is the basic treatment for tuberculosis. Ideally, this means relaxing mentally and emotionally as well as physically. Rest gives the affected lung tissues a chance to heal. An adequate diet while resting is of course also a necessity. Rest in a sanatorium for the treatment of tuberculosis has been found to be usually better than resting at home.

Various surgical procedures are often used in order to help the lungs to rest and relax, so as to facilitate the cure. These procedures include collapsing the lung temporarily (pneumothorax, pneumoperitoneum) or permanently (thorocoplasty); operating on the phrenic nerve so as to stop the movement of one side of the diaphragm for a number of months (phrenic crush); and removing the infected parts of the lung (resection).

Drugs which directly attack the tubercle bacillus have been discovered and have come into wide use in recent years. They have made possible great strides in the direction of shortening the period of treatment required to arrest the disease, and have simultaneously reduced the frequency of the need for surgery and made possible the use of desirable surgery in some cases which were formerly inoperable. These include streptomycin and para-aminosalicylic acid (PAS). These drugs cannot however be considered "cures" for tuberculosis in the light of the present evidence. Moreover, they produce toxic "side effects" which may be serious, and it has been demonstrated that tubercle bacilli can develop "resistance" to them during treatment. In very recent months there have appeared two new drugs, Rimifon (Nydrazid) and Marsilid, which appear to be very valuable. They have been tried out on human beings for only four months at this time (March 1952) however; so that conclusions seem premature. In this discussion it will be assumed that, in its main outlines, the present treatment of tuberculosis will not become superfluous in the next few years.

The patient should continue treatment until X-rays show that the lungs have healed and until laboratory studies of sputum and other body fluids fail to show active tubercle bacilli. In general, the longer the treatment continues the better the outcome. As his condition improves, and under medical supevision, the tuberculous patient can and should start resuming activity and gradually increase it, while still in the sanatorium, so that he is used to a number of hours of daily activity by the time he leaves the sanitorium. This activity should consist of some kind of suitable "light work."

Post-treatment regime

After the disease is "arrested" or "inactive" and he has terminated his period of treatment, the ex-patient is wise to continue being careful about his activity. While it is better to resume gainful employment as soon as possible, it should at first be part-time, and his entire daily activity after leaving treatment should not at first add up to more hours' activity than he was on before leaving treatment. Moreover, the kind of work must be such as will not be likely to bring on a relapse. Heavy manual labor, trades involving silica dust, and exposure to inclement weather are unsuitable. Personal, family or work situations involving emotional crises, stresses and conflicts are also unsuitable.

The hours of work should be gradually increased, under medical prescription, over a period of 6 or 9 months or longer, until a full working day is achieved. For the first year or two, frequent medical check-ups and X-rays are a must, to make sure that the arrest of the disease is being maintained. Weight should be watched carefully, plenty of rest gotten, and the rules of general health scrupulously observed. If the first 2 years after discharge from treatment are passed without relapse, the ex-patient can space his check-ups further apart, but must never stop taking care of his physical and emotional health, getting his rest and watching his weight. After 5 years following discharge, the possibility of relapse is relatively slight. But an annual X-ray is never superfluous for tuberculous ex-patients.

PSYCHOLOGICAL ASPECTS BEFORE AND DURING TREATMENT

Psychological considerations in incidence

In tuberculosis as in any other disease, one is dealing with not just infected or damaged tissues, but with thinking, feeling people whose mental and emotional processes affect their physiological processes every hour of their lives, just as inevitably as their physiological functioning affects their mental and emotional reactions.

The tubercle bacillus is a necessary but not sufficient cause of tuberculosis. Its presence in a person's tissues does not *in itself* cause the disease to develop. Only a small percentage of people who have at one time or another been infected with the tubercle bacillus will ever develop a clinical case of tuberculosis. The explanation is that people's bodies usually *resist* the bacillus and render it harmless, and only when the body's resistance is lowered sufficiently or when the invading bacilli are sufficiently numerous and virulent—or when both these conditions are present—can the bacillus multiply and produce active tuberculosis.

Bodily resistance is lowered by inadequate diet, insufficient sleep, and poor living or unhealthy working conditions. Exposure to tubercle bacilli is of course greater where there are more people

to come in contact with. And we know that silica dust in the air is harmful to the lungs. So it is not surprising to find that tuberculosis occurs more often among poor people than among the well-to-do, more often among those who over-work than among those who do not, more often among people living in crowded cities than among people living in rural areas, and more often than usual among people whose work exposes them to silica dust.

Nevertheless, it is clear that all the things just mentioned are not the whole story, because:

(1) the *majority* of poor, overworked city-dwellers, even those exposed to silica dust, *do not* develop tuberculosis, and

(2) quite a few well-to-do people who do not overwork, who live in the suburbs and are not exposed to silica dust, *do* develop tuberculosis.

What is the rest of the story?

The rest of the story, it is now pretty well agreed by those who have observed and studied the subject, is to be found within the individuals concerned. People's thoughts, feelings, emotions and attitudes directly and indirectly affect their heart-beat, their blood-pressure, their temperature, the tenseness of their muscles, their digestion, their excretions, their breathing—their entire metabolism and physiology, including the functioning of the all-important glands of internal secretion. In brief, upsets in the personal and emotional lives of individuals–maladjustment and strain in their personal, family and work relationships—produce the upsets and strains in their metabolism and physiology which lower their resistance to the point where, together with the presence of the tubercle bacillus, there is produced the *necessary and sufficient condition* for a tuberculous breakdown.

(All of the above represents an increasingly important viewpoint which may be called the *psychosomatic* approach in medicine generally. The word psychosomatic comes from psycho (—pertaining to the mind) and soma (body) and is used to refer to the interaction and interdependence of mental and physical functioning in the causation and treatment of human ailments and diseases. It has been estimated that in one-third of all patients seen in general medical practice the symptoms are *primarily* of psychological or emotional origin, and that in still another third of all cases the patients' psychological or emotional problems are complicating and adding to the burden of their physical disease.)

Another psychological aspect of the incidence of tuberculosis has to do with what has been called the "need for illness." It has been shown that some people have a very strong unconscious desire for dependence and for being taken care of and pampered, (the way they were when they took sick as children) ; and coming down

with tuberculosis or some other chronic disabling illness gratifies this need excellently. In some other cases, there is good reason to believe that falling ill with tuberculosis represents a desperate way of escaping from an unbearable emotional life-situation. A man through falling ill may escape the imminent necessity of facing up to the fact that he has been a failure; a woman may in this way seize upon the only possible way of escaping the daily heartache and frustration of being tied to a chronic alcoholic; for some younger persons it may provide the only refuge from an overdominating parent or from an intolerable family situation involving painful contrast with a clearly more competent brother or more attractive sister. The escape to illness in these situations is of course not a solution arrived at consciously or deliberately.

Even the breakdowns caused by inadequate diet or overwork or lack of sleep, or following on a bad case of pneumonia, may result indirectly from a similar "escape mechanism." Questions such as these arise in many such cases: Why does an individual with plenty of food in the house eat an inadequate diet and lower his resistance? (If, for example, it is because he has been imbibing a great deal of alcohol and so had no appetite, what was he trying to drown in drink?) Or, what was driving him to those long hours of overwork and many wakeful nights? Or, with rubbers and umbrella in the house, what possessed him to walk in a storm for an hour and get soaked and chilled?

Resistance to treatment for tuberculosis

One psychological source of considerable trouble in combatting tuberculosis is the resistance people have to the whole idea of being in any way connected or associated with the disease. The word "tuberculosis" for most people unfortunately has the connotation of something that is horrible and somehow shameful, to be avoided at all costs if possible. People will refuse or neglect for many months to go to a doctor to have themselves examined, even though they themselves may suspect all along, from their symptoms, that they may have developed tuberculosis.

Even after the diagnosis has been made, people will often resist and delay taking treatment. Sometimes they will insist there must be a mistake in the diagnosis; tuberculosis is something that "just couldn't" have happened to *them!* This is especially likely to happen in cases where the person still feels well. Or they will for some time reject the idea of treatment, with the rationalization that they can handle the disease themselves, by taking things easy at home; going to a hospital isn't necessary, etc.

Sometimes people with a strict religious background will regard their tuberculosis as a punishment for some real or imagined sin they have committed, and will feel that the only cure lies in atoning

for this sin. This, too, may delay the beginning of treatment. Or, knowing he has tuberculosis, a person may feel "Now that all is lost, I might as well have one last fling" and go on a three-month binge of dissipation and drinking.

As a result of these and other resistance-reactions, a large percentage of sanatorium admissions are far advanced cases, although with current case-finding facilities most of them could have been detected and started on treatment while still in the beginning (minimal) stages of the disease.

The "Tuberculous Personality"

It used to be thought that there was a characteristic "tuberculous personality", that only a certain type of person was likely to get the disease, and that the more far advanced the disease became, the more clearly and obviously this type of personality became evident. Or, even if it was conceded that different kinds of people could develop tuberculosis, it was contended that the toxins generated in the body by the disease produced the characteristic "tuberculous personality." This "personality type" used to be variously described, often in mutually contradictory terms, as: introverted, apprehensive and anxious, over-optimistic, depressed, strongly motivated sexually, childish, neurasthenic, and mentally alert. In recent years, with the accumulation of actual test and more careful personality study data, it has been generally concluded that there is no single or predominant type of person who develops tuberculosis. Nor is it at all clear that those who develop tuberculosis also develop, after awhile, a characteristic set of personality or behaviour traits distinctive from those which may reasonably be expected to develop whenever a person is an invalid for a long time. There is some evidence that tuberculosis patients do show anxiety, mild neuroticism, discontent and depression more often than is found in the general population; but the same thing can be said for groups of patients hospitalized for various other chronic—and even acute—diseases.

An aspect of the alleged "tuberculous personality" which has received a good deal of attention is the claimed relationship between tuberculosis and schizophrenia. It has been noticed that an uncommonly large percentage of tuberculosis develops among schizophrenic patients in mental hospitals. There is however no impressive evidence for the conclusion that it is the "schizoid type of person" who is likely to develop tuberculosis. It is pertinent to remember that schizophrenic patients are hospitalized for long periods of time, and that tuberculous infection is encouraged by overcrowding and by carelessness in matters of personal hygiene. As already mentioned above, the evidence indicates that all kinds of people (in terms of personality, as well as of age, sex,

color, and occupation) come down with tuberculosis. It is true that long-continued invalidism, with the necessary helplessness and dependence on others which it entails, may encourage a regression to childlike and even infantile modes of behavior and feeling; but this again is something that applies equally to patients with any chronic illness, and has no unique reference to tuberculosis patients.

The handling of the patient

So far we have focussed our attention on the psychology of the patient himself—his own maladjustments, resistances, and personality. The other side of the picture certainly has its importance as well; there is also the psychology of the handling of a tuberculous patient, from the viewpoint of the treating physician or sanatorium.

It is a traumatic experience to be diagnosed as tuberculous. The manner in which the news is broken to the patient may affect his whole outlook, favorably or unfavorably, thus affecting his recovery. Too abrupt or inconsiderate an announcement may increase the emotional trauma. Honesty is necessary, but tact and reassurance will help a good deal. On the other hand, ultimate damage may result from false assurances at the start concerning the nature and probable length of treatment. Some physicians adopt the immediately expedient procedure of assuring the subject that he need spend "just a few months resting up". This may help in getting him to go to a sanatorium, but the later reaction may be serious when the patient contrasts the actuality with the initial assurances by his physician.

The circumstances surrounding the patient's actual admission and introduction to the sanitorium can also affect his outlook and therefore his progress in treatment. A cheerful reception, pleasant accommodations, personal attention to immediate needs, and adequate briefing on the reasons for as well as the details of the treatment regime, will have a much more positive effect than their opposites. Much can be done at this initial stage to prevent patients from starting their treatment in a fearful, discouraged or rebellious frame of mind.

A very helpful general approach in the handling of tuberculous patients is the explicit premise and implied assumption, from the very beginning, in all that is said or done or goes on at the sanatorium, that the patient has come to get well and will be picking up and leaving at a future date. One unmistakeable way of establishing this atmosphere is the early initiation of vocational rehabilitation counseling and training for those who will be needing it on discharge, and the steady subtle suggestion and stimulation of miscellaneous post-discharge plans and projects for all patients.

Without at all being encouraged to lose sight for a moment of the necessity for abiding by the prescribed treatment regimen, the patient can be imbued from the very start with the belief and expectancy that he will, in due time, resume normal living. This belief and expectancy are, in general, justified; and their inducement in all patients may well act as a positive factor favoring cure.

There are many related and other aspects of the treatment situation which can affect, for good or for ill, the patient's peace of mind, and thus his capacity to rest and relax mentally and emotionally as well as physically, which is the general basic prescription for helping his injured lung tissues to heal. For our purposes here it should be sufficient to mention briefly some of the more obvious ones; the thoughtful reader can easily extend the list:—

(1) The duration of bed-rest. (For some patients, the physical advantages of immobility are outweighed by the restlessness and frustration engendered by more bed-rest than can be well tolerated.)
(2) The psychological trauma of surgery.
(3) The strictness with which the "rules of the house" are enforced and supervised. (For different patients, the optimum amount will differ.)
(4) The policy on "passes to town", visits from relatives and friends, and visits home. (Ditto as to the optimal policy.)
(5) The amount and kind of information given the patient concerning the progress (or retrogression) of his own case. (Ditto as to optimal policy.)
(6) The inculcation or non-inculcation of unfounded fears and anxieties by staff members *or other patients.*
(7) Attitudes of and the patient's relations with doctors, nurses, and other staff members.
(8) Social and recreational contacts and opportunities within the sanatorium, (including segregation vs. mixing of the sexes).
(9) The availability or non-availability during treatment of competent vocational rehabilitation counseling and adequate opportunities for beginning training. (This can be of critical importance; and, except for the VA hospitals and a very few private sanatoria, is a woefully neglected area).

Irregular discharge; a psycho-social problem

There is a common and distressing thing called AMA, or leaving treatment "against medical advice", sometimes referred to as "irregular discharges". Between one quarter and two-thirds of all tuberculosis patients leave treatment in this manner, with often

212229°—52——8

fatal consequences to themselves—and others whom they infect after they leave. There is of course usually some good and sufficient, even urgent reason for so doing, as the individual patient involved sees it; although it is possible that AMA derives at least partly from the previously-mentioned aversion to the whole idea of tuberculosis. A classification of reasons for leaving treatment against medical advice is presented below. It is only one of many possible classifications, but any classification would contain much the same individual items.

Concern over affairs at home

Domestic or family problems.
Financial situations, including trouble over pension or compensation.
Desire to be closer to home, so as to be able to take care of things if necessary.

Problems of hospital adjustment

Dissatisfied with treatment.
Dissatisfied with attention of hospital personnel.
Dissatisfied with hospital rules.
Boredom in hospital.
Desire to avoid disciplinary action at or discharge from hospital.

Miscellaneous

Influence of family or other people outside hospital.
Immaturity or irresponsibility (including alcoholism).
Fear of surgery.
Lack of appreciation of seriousness of tuberculosis.
Feeling of hopelessness about physical condition.

It can been seen that it is the fears, attitudes, personal problems and adjustment difficulties of patients which impel them to leave against medical advice and thus reduce their own chances for survival and recovery. Certainly, here is a challenging problem in the psychological aspects of the handling of tuberculosis, which however goes beyond the sphere of sanatorium management. If ways could be found to:

(1) provide economic care and social aid for the family;
(2) make the sanatorium regime interesting and meaningful to the patient (including vocational rehabilitation training as part of the treatment whenever required); and
(3) educate each patient *and his family* from the very start as to the nature of and necessary treatment for tuberculosis,

we could reduce considerably the number of tuberculous relapses, deaths and new infections, since it can be demonstrated that ir-

regular discharges from treatment are a very large factor in all of these.

PSYCHOLOGICAL PROBLEMS IN THE GENERAL AND VOCATIONAL REHABILITATION OF TUBERCULOUS PATIENTS

In any chronic illness or long hospitalization, there is an understandable tendency for the patient to get used to being waited on and taken care of without effort on his part, and to welcome and even try to prolong this pleasant situation. One can say that the patient's "dependency needs" are satisfied and stimulated by hospitalization. This is especially true with tuberculosis, in which there is often no particular pain or discomfort involved in the illness itself. The term "hospitalitis" is sometimes used to describe this reaction when it reaches the point of an apparent or expressed willingness to stay hospitalized indefinitely, and a reluctance, a claimed inability or even refusal to get up and around when the appropriate time comes. It stems in part from the "need for illness" previously mentioned. Mature people with family obligations and a sense of responsibility will not often show this behaviour; but many tuberculous patients are young or immature or without family responsibilities.

Although there is a fairly general trend in this direction, it occurs, full-blown, more frequently among people who have led a sheltered life, or who have been very dependent emotionally on a parent or spouse, and never learned early and with enthusiasm to "stand on their own feet." "Hospitalitis" also occurs more often with patients in the very lowest income groups, to whom the pleasant surroundings, relatively good food, and freedom from responsibility of the sanatorium may seem much preferable to the poverty and struggle of their lives on the outside.

Patients who do not develop a case of "hospitalitis" nevertheless may acquire attitudes and fears during treatment which will hinder their getting back to normal living following a "cure" in the strictly medical sense. A patient may have become so obsessed with the fear of relapse that he is almost literally afraid to lift a finger for himself. He may worry so much about infecting other people as to keep him from returning home to his family or from entertaining the idea of getting married. His concern about his work ability may keep him from even trying to hold a job. He may feel that having had tuberculosis has made it impossible for him ever to achieve and experience the desirable things of life. Any of these constitutes a psychological hazard to successful rehabilitation.

Another frequent psychological hazard is returning to the pre-illness family or work situation. Let us recall here what was said earlier about falling ill with tuberculosis as a way of escaping from

an unbearable situation. In those cases where this applies, going back to the same situation will be a hindrance to rehabilitation—in fact, it will court a speedy relapse.

All of the above are areas where the use of psychotherapy during and following treatment needs intensive exploration.

Even without any of the problems just discussed—hospitalitis, crippling fears, or going back to a possibly precipitating situation—any tuberculous ex-patient has plenty of handicaps to face and hurdles to overcome in achieving a normal life. He is forever limited as to the amount of exertion he can permit himself, at work or at play; and the ways in which he can earn a living are limited. He must always be vigilant against a recurrence of the disease, by regular check-ups and by watching his rest, his diet, his weight. The long period of treatment, with its loss of earning power, has probably left him and his family in bad financial shape, with all savings gone. The treatment situation has usually isolated him from his familiar surroundings and he will find that things and people—including his own family—have changed since he left. He has gotten used to the effortless dependency of an institutional situation, and must relearn ordinary adult self-reliance no less than ordinary ambulation. These things he must usually work out for himself, with whatever help he can get from family and friends, or, if he is lucky, a social worker.

As an unfortunate consequence of public education as to the contagiousness of active tuberculosis, he will find that people are wary of the inactive tuberculous patient as well, and may experience the distressing situation of finding himself shunned when he completes his treatment and returns home. This can apply to employers as well as friends, and he may have to hide his tuberculous history in order to find employment; which could result in physical harm if it involves exertion or working conditions unsuitable for a tuberculous person. Here is a task for public health education.

The central and major item in rehabilitation is, of course, vocational rehabilitation. The adult patient with any illness or condition cannot be said to be really over it until he is back on the job, at whatever he was doing before taking sick or at something suitable to his condition if what he used to do is now unsuitable. With tuberculous patients, as mentioned before, the first steps on this long road back are best taken as soon as his physical condition permits any activity at all. From the very first day he is allowed "bathroom privileges," the systematic building up of his activity tolerance should have as its conscious goal his eventual achievement of full-time work activity. Some of the psychological hazards which may occur along the way have

already been touched on above. After the patient leaves treatment, if he has a definite pension for the duration of his disability there is the new hazard of the temptation to hang on to his pension rather than having to depend on his earnings, which may be uncertain. This has been called "pensionitis". If there is no pension or other independent source of support following discharge, he has the very serious and urgent temptation to do more and harder work than his condition makes wise, in order to meet his accumulated obligations.

There is no disputing the necessity in most cases for sheltered, part-time employment, gradually increased under medical supervision to a full day's work, if the gap between the protected environment of the sanatorium and the every-day life as part of the family and the community is to be safely bridged. During this period of part-time employment when earnings are of necessity less than normal, supplementary financial aid is needed if the ex-patient is not to be faced with another unbearable situation. Family emotional conflicts arising out of the prolonged separation and dependency may need working out with family agency aid. The Altro Workshops in New York have done pioneer work in demonstrating beyond all question the value for rehabilitation of this kind of after-care.

SUGGESTIONS FOR FURTHER READING

On the general physical and medical aspects of tuberculosis, a good treatment for the nonmedical reader is the manual by Hallock *(5)*.

The literature on tuberculosis is replete with discussions of things psychological as they affect the patient's reaction to, cure from and rehabilitation following the disease; based mostly on clinical observations. The papers by Eyre *(4)* and Merrill *(9)* are two thoughtful such discussions. During the 13-year period between the two, our knowledge of psychosomatics was accumulating. The most recent and ambitious discussion of this nature and one based on systematic observation and interview, is the volume by Wittkower *(15)*.

The pamphlet by Tollen *(13)* is the most detailed study and discussion of irregular discharge.

The monograph by Barker et al., *(2)* is an excellent critical review of the literature in the entire field through 1944, including the not very numerous experimental studies.

As mentioned previously, investigations into the "psychological characteristics" of tuberculous patients, have not produced very clear-cut results. Many have not been experimental in procedure; in many there have been no control groups or the groups used for comparison have not permitted of useful conclusions; and the num-

bers of cases involved have often been small. Three of the more recent studies along this line, using standard psychological instruments, are those of Page *(11)*, Albee *(1)* and Derner *(3)*.

Experimental or controlled studies of the *rehabilitation* of the tuberculous have been mostly conspicuous by their absence. An unpublished but oft-quoted thesis by Moore *(10)* describes what was until recently the only attempt to compare the personal characteristics of relapsed and non-relapsed tuberculous patients. The comparison was made after the relapses had occurred. This only definitive research so far initiated into the psychological and social aspects of rehabilitation is that of Harris *(6)*. In this study, which is still in progress, comprehensive initial study of 300 patients, made as they are approaching recovery from a first "break" with tuberculosis and supplemented by annual follow-up data, should enable truly meaningful comparisons to be made later between rehabilitated and relapsed subjects.

Programs for the rehabilitation of the tuberculous must necessarily be carried on even if there is not yet a complete set of detailed guiding principles fully validated by research. Mayer's paper *(8)* describes a going program at one sanatorium, and Siltzbach *(12)* describes the Altro Workshop post-sanatorium program already mentioned. The OVR pamphlet *(14)* details the role of various professional groups in the rehabilitation process. Kiefer's book *(7)* is an excellent over-all survey of rehabilitation in tuberculosis.

REFERENCES

1. Albee, G. W.: *Psychological Concomitants of Pulmonary Tuberculosis.* Amer. Rev. Tuberc. 1948, 58, 650–661.
2. Barker, R. G., Wright, B. A., and Gonick, M. R.: *Adjustment to Physical Handicap and Illness.* New York: Social Science Research Council, 1946. Bull. No. 55, ch. 4.
3. Derner, G. F.: *Certain Aspects of the Psychology of the Tuberculous.* Unpublished Ph.D. Thesis, Columbia University, 1950.
4. Eyre, M. B.: *The Role of Emotion in Tuberculosis.* Amer. Rev. Tuberc. 1933, 27, 315–329.
5. Hallock, G. T.: *Tuberculosiss A Manual for Biology Teachers.* N. Y. Coun. of Tbc. and Hlth. Assoc. of Greater N. Y. 1947, pp. 96.
6. Harris, D. H.: *Social and Psychological Factors in the Rehabilitation of the Tuberculous.* chap., pp. 234–244, in *Groups, Leadership and Men,* (H. Guetzkow, ed.) Pittsburgh, Carnegie Press, 1951.
7. Kiefer, N. C.: *Present Concepts of Rehabilitation in Tuberculosis.* N. Y., Nat. Tbc. Assoc. 1948, 398 pp.
8. Mayer, N.: *Aims and Methods in the Hospital Rehabilitation Service.* Office of Vocational Rehabilitation, F.S.A., Staff Devel. Aids No. 2, Rehab. Ser. No. 16, Wash., D. C., June 1946, pp. 15–22.
9. Merrill, B. R.: *Psychology of Tuberculosis Rehabilitation.* Office of Vocational Rehabilitation, F.S.A., Staff Devel. Aids No. 2, Rehab. Ser. No. 16, Wash., D. C. June 1946, pp. 1–14.

10. Moore, M. G.: *A Psychological Study of 40 Relapsed Tuberculosis Cases.* Unpublished Master's Thesis, Western Reserve Univ., 1940.
11. Page, R. B.: *Application of the Minnesota Multiphasic Personality Inventory to Tuberculous Patients.* Unpublished Ph.D. Thesis, Univ. of Minn., Feb. 1947.
12. Siltzbach, L. E.: *Clinical Evaluation of the Rehabilitation of the Tuberculous.* N. Y., Nat. Tbc. Assoc., 1944, pp. 70.
13. Tollen, W. B. *Irregular Discharge.* Wash. (Gov. Pr. Off.) Vet. Admin. Pamph. 10–27. 1948. pp. 64.
14. (Various) *Contributions of Various Professional Groups to the Rehabilitation of the Tuberculous.* Office of Vocational Rehabilitation, F.S.A. Staff Devel. Aids No. 6, Rehab. Serv. Ser. No. 69. Wash., D. C., Aug. 1948. 42 pp.
15. Wittkower, E.: *A Psychiatrist Looks at Tuberculosis.* London: National Association for Prevention of Tuberculosis, 1949, pp. 152.

FACIAL DISFIGUREMENT

Theodora M. Abel

INTRODUCTION

Facial disfigurement may become as severe a handicap to successful living as does any other form of physical disability. There may be no sensory or motor defect, but none-the-less the problem of the facially deformed are often acute due to the all pervasive role played by psychological and social factors.[1]

Up till recent years investigators in the field of physical handicap and rehabilitation were not particularly concerned with the problems of deformity of the face. Very little material has been recorded in the literature. Books on the handicapped as well as research investigations did not deal with the topic specifically. Some research on facial expression was carried on but problems of facial deformity were not considered. Attention was focused on studying the face as a "carrier" or personality; judging the emotions from facial expression, the relationship between personality and physiognomy and the problem of physical attractiveness and repulsiveness were some of the aspects of this problem which were investigated. Only in recent years has there been an increasing awareness that facial deformity is, or may be, a handicap to an individual and may cause him to feel ill-equipped to cope with the social and economic life demanded of him in our society today. This increasing awareness of the problem stems both from the growing number of war casualties and civilian accident cases and from the cultural emphasis placed in the United States today on facial beauty and physical attractiveness for employment, marriage and success in general.

The physically handicapped may experience feelings of being atypical members of society against whom the majority are prejudiced. The facially disfigured are likely to experience these feelings intensely because of the important social role the face

[1] The major portion of the material contained in this Chapter was obtained by an interdisciplinary team (Albert Bryt, Psychiatrist; John M. Converse, Plastic Surgeon; Edith Lauer, Home Interviewer; Frances C. Macgregor, Sociologist; Serena Weissmann and Theodora M. Abel, Psychologists), who worked on a research project entitled "The Psychological and Sociological Aspects of Facial Deformities and Plastic Surgery." The work was carried on under the Departments of Psychiatry and Surgery, New York University College of Medicine, during 1949–1951. The project was supported by a grant from the National Institute of Mental Health, United States Public Health Service, was initiated by Frances Cooke Macgregor, M.A. Coordinator and was under the direction of John Marquis Converse, M.D. The results of the project are to appear in a forthcoming book entitled "Facial Deformities and Plastic Surgery, a psycho-social Study," and to be published by Charles C. Thomas, Springfield, Illinois.

plays in interpersonal relationships. In our society a pretty or handsome face in addition to a pleasing personality is an asset for many positions; an ugly or deformed face is a liability. Discrimination and prejudice operate effectively and easily against the face where there is asymmetry, scars, abnormal growth, paralysis and absence of features.

CLASSIFICATION

There are several ways in which deformities of the face can be classified. One method is that of type. There are eight major categories that may be used. These are the following: Nose; ear; eye; hairlip; jaw; facial paralysis; birth mark and facial scars; multiple—more than one of the above categories.

In any one of these categories there can be a great variation in the nature of the disfigurement. In the case of the nose, for example, the deformity may be one of absence or of abnormal size, shape and coloring (bulbous and red). In the case of the external ear, there may be an absence or part or all of one lobe or of both lobes, or the lobes may be of exaggerated size, shape, and flaring. Facial scars appear in almost unlimited varieties resulting from burns, cuts, tears, disease and surgery.

Facial deformity may also be classified according to degree of severity based on esthetic judgment. A fourfold classification can be made as follows: [10]

1. Mild: Neither conspicuous nor apt to attract attention, requires having attention called to it before it is noticed, but may be a source of distress for some individuals.
2. Moderate: Noticeable. Apt to elicit remarks, teasing, questioning or staring, but no violent negative reaction in general.
3. Marked: Definitely noticeable. Likely to evoke strong reactions from others such as feelings of repulsion, jokes, pity, curiosity, deliberate avoidance or undue staring.
4. Gross: Definitely shocking and repelling to others. Evokes violent reaction of horror, repulsion, pity, etc.

Such a classification may be open to the subjective influence of the individual making the evaluation, but it has been found useful in working with individuals with facial deformity.

A third classification is a two fold one based on origin of the deformity, congenital (present at birth) and acquired. It may happen, however, that a congenital deformity is not apparent at birth and only makes its appearance as the individual matures. This may be the case with an abnormality of the shape and size of the nose; only as the individual reaches puberty does his nose show its aberration. Acquired deformity can be caused by disease

or trauma. The latter may result from an accident or due to surgery.

Or, finally, there can be a cultural classification of deformity. In one society or cultural group an individual may be deformed whereas in another group he is not so considered. An individual with markedly protruding lips would be considered disfigured in our society but in another would be looked upon with favor (Ubangi). A flat nose, a hooked nose or a facial scar (from a knife or sword) may be a mark of prestige in one cultural group whereas in another it would meet with disfavor.

PSYCHOLOGICAL AND CULTURAL ASPECTS

The facially disfigured could more adequately become adjusted to the defect itself were it not for the universal social attitudes which hold that if an individual looks different he must be different. This is true, of course, of all physically handicapped. But individuals with facial disfigurement become easy targets for a variety of social attitudes which reflect disapproval, fear, superstition and prejudice, sometimes manifested in overt, sometimes in disguised forms of discrimination and hostility. Throughout recorded history and in civilized and primitive areas of the contemporary world, social attitudes are to be found that assume that if the individual has a face markedly deviant from that of the norm, he is a deviant person not only in facial appearance but in personality characteristics as well. These deviant individuals with deformities of the face may be treated as outcasts, as individuals with dubious prestige or may be the object of ridicule and jest.

In the United States special significance is given to physical attractiveness, particularly of the face. The movies, radio, press and cosmetic industry have reinforced this value in an intensive and unrealistic fashion. Where a general bias for physical perfection exists, the individual with a disfigured face is at a great disadvantage. He not only is unable to measure up to the standards of facial appearance the people around him consider acceptable, but he is also subject to a strong tendency on the part of others to attribute to his condition other qualities considered socially non-accepable. He may be stereotyped as the villain or the gangster, or the one "who has led an immoral life."

Macgregor *(10)* has categorized social attitudes as those based on folklore and superstitions, genesis of disfigurement and cultural deviation. In the first place; she has shown how a number of "primitive beliefs" exist today in our civilized society concerning the facially deformed. Deformity may be attributed to incestuous parentage, punishment for wrong doing, a means of purification,

"sins of the fathers," or pre-natal influence due to some experience of the mother. One patient with a port-wine stain stated that his mother thought the birth mark was due to the fact that his twin brother must have had his foot against his forehead while the mother carried them. The boy said, however, that he had been asked by others if his mother had tried to do away with him before he was born. A mother, whose child was born with a hare lip, claimed she was told this occurred because she had petted a rabbit while pregnant (reported by an Italian woman in New York). An Irish parent with gross deformity due to burns said, "This is part of the family curse and should end it." At the present time, there are a number of stereotypes about facial deformity prevalent in the United States. The appearance of the face is often evaluated in terms of a personality trait; if there is disfigurement the evaluation is primarily negative and even stigmatizing. A person with a saddle nose may be labeled an ex-prize fighter or a gangster; one with facial paralysis on one side may be called a tough character. Some faces will evoke laughter and ridicule for they seem to suggest caricatures, such as cases with flaring ears or bulbous noses. Congenital deformities or those caused by diseases may be looked upon with much more disapproval than are deformities resulting from accidents. The loss of an external ear from an automobile crash may be viewed with less antipathy than that of a congenitally absent ear lobe. A person from whose face a jaw bone has been removed as the result of a gunshot wound at the battle front is likely to be more socially acceptable than is a person whose jaw has been removed due to a malignant tumor.

Finally, in areas where there is prejudice and discrimination against minority groups, a person having a physical trait characteristic of, or believed to be characteristic of, a given minority (slanted eyes or yellow skin of the Asiatic, "Jewish nose") may find himself up against disapproval and even non-acceptance and this despite the fact he belongs to the culturally dominant group.

The facially disfigured like other handicapped may be treated alike and acquire the same attitudes of other minority groups, racial or religious. They feel discriminated against and they learn to see themselves as others see them. They can become the scapegoats or the focus on whom non-disfigured individuals may project their feelings of resentment and hostility, either directly or in a veiled manner. They may also become the objects of pity, an attitude which does not enhance their chances for becoming socially accepted and deriving satisfaction from interpersonal relationships.

PERSONALITY CHARACTERISTICS

Within the overall frame-work of the social environment each facially disfigured person has his own characteristic ways of adjusting to his deformity and to the society in which he lives. Many, if not all, of his attitudes reflect the values his society places on deformity. These attitudes are likely to be those he grew up with, the ones that his parents and the significant people he associated with transmitted to him directly or by implication. If his facial deformity has been present since birth the attitudes with which he was surrounded in his infancy and childhood will play a large and even determining role in the forming of his personality. If he acquires facial deformity at a later time, he will respond to this situation as he would to any frustration, trauma or abuse on the basis of the kind of person he is, for he will have acquired in the course of his life prevailing attitudes and feelings toward facial deformity. His prevailing attitudes toward himself will be consistent with what he has already learned about deformity.

Despite the prevailing attitudes toward disfigurement of the face, marked differences in attitudes toward themselves and their disfigurement may be found among individuals who may have grown up in the same society or cultural group. Some individuals, whether they are severely or only slightly disfigured, voluntarily complain of discrimination by others. They place the blame for the difficulties they meet in the social and economic world on their deformed faces. They feel that because of their face they are excluded from jobs commensurate with their training and ability and for the same reason they may feel they have failed to make friends or obtain marriage partners of their own choosing. They believe that they are cast offs and that the interpersonal relationships they make are only second best. Failure to marry or divorce is blamed on the defective face. The individuals who complain the most openly about their difficulties and who are likely to be displeased by the results of plastic surgery usually exaggerate the extent and severity of their facial deformity (there are exceptions, of course).

As a result of his psychiatric interviews with patients seeking plastic surgery, Bryt found that about one-half of the patients seen by him are what he calls *the complainers.(10)* Among the latter Bryt reported that the gross and severely disfigured are in the minority; mild disfigurement being the more usual type. Some of these individuals were diagnosed by Bryt as mentally ill, while others showed various kinds and degrees of neurotic patterns. The other half of individuals with facial disfigurement Bryt interviewed, came into the clinics on the advice of other

people. They, themselves, do not feel as strongly the social pressures of discrimination, staring and non-acceptance as reported by the complainers. When questioned they acknowledge that at times they feel social and economic barriers to success. They believe that their difficulties can be due to their face and they are aware of the limitation on intimacy with the opposite sex or lack of closeness in other interpersonal relationships imposed by their facial defect. Some of them say that their face is only one aspect of their total problem, and that when things go wrong with them they are then more likely to blame their faces for the difficulty than on the occasions when they are being more successful. Bryt also noted in his investigation that the non-complainers are more likely to be grossly or severely disfigured with only a few who are moderately disfigured. Noncomplainers are more likely to have acquired their disfigurement in adulthood than the complainers. He found that it was more usual for the complainers to have been deformed since birth. Individuals with a minor facial defect complain more spontaneously and consider their deformity a more severe social and economic liability than do the severely disfigured. The mental health of the former seems to be more seriously impaired than is the case of the latter.

In a study of projective tests in which the Rorschach and human figure drawings were employed, Abel and Weissmann reported results similar to those presented by Bryt *(10)*. They found marked differences in personality characteristics between the mildly and severely disfigured. Individuals with various types and degrees of disfigurement are likely to be less productive in their use of creative imagination and fantasy, less spontaneous in showing their feelings and in responding to people in the world around them than are nondisfigured individuals. However, the mildly disfigured are freer in this respect than are the severely disfigured, they are less repressed and less resigned. Both groups have a pervasive doubt about their ability to be accepted by others and to accept themselves. The severely disfigured are both more sure that others do not accept them and are more willing to concede to the role of nonacceptance than are the mildly disfigured. The latter are in conflict with themselves, they appear more self-preoccupied and less resigned than are the severely disfigured. The latter, especially those who have become disfigured in adulthood, are particularly repressed and even though they have a desire to do so, tend to withdraw markedly from participation in activity with others.

The projective material further shows that the mildly disfigured are aware that their handicap is not entirely a realistic one, that it is partly a figment of their imagination. In blaming their dis-

figurement for their difficulties in getting along in society they have some doubts, and they are not entirely fooled by the fact that their deformity is one that other people can neither see easily nor easily believe. The individuals with marked and gross disfigurement, on the other hand, accept their disfigurement with less doubt and they can associate their deformity with their emotional difficulties (at home, at work, out in the community) because they are correctly aware that other people would accept and believe that their appearance would be a source of difficulty to them. There are exceptions to these differences between marked and mild deformities; some severely disfigured have considerable anxiety and are not resigned, while some more mildly disfigured are resigned and do not complain much.

Giving birth to a disfigured child is very likely to be viewed by parents in our society as a stigma. Particularly, the mother feels guilty and believes in some way she is responsible for the child's deformity. Accident or disease that causes a deformity in childhood is more certain to be viewed realistically by parents although they may also develop feelings of guilt, that perhaps the accident could have been avoided. These feelings of guilt on the part of the parents may lead to the handling of the child with excess concern or over-protection and this treatment is inducive to making the child feel atypical and in causing his siblings to feel that he is different from them. The ways in which the parents, particularly the mother, goes about concerning herself with her child's deformity will develop in him attitudes and feelings toward his deformity and toward himself and toward others which he carries over into adult life. Bryt has classified the ways in which parents treat facial deformity into five categories: Avoidance, hiding, denying, undoing and normal *(10)*. In the first category, the child is kept away from people even to the point of isolation so that the mother will not be questioned. Some children have their disfigured face partly covered by a bonnet, or cap. They may be taught to turn their head away and to cover the deformity with their hand. In some families the opposite approach is used. The disfigurement is denied and the child is exposed to the outside world but at the same time the parents will not discuss the disfigurement nor answer questions of outsiders about it. Occasionally a disfigurement is considered as cute or something particularly appealing (tiny ear where a partial lobe is missing). It is as though the mother wanted to undo her former belief of a stigma. Finally, Bryt describes the normal approach of parents as one in which the deformity has never been considered as a stigma or punishment. The disfigurement is not denied, is discussed with the child and with others in a matter of fact way.

This attitude may be called the "normal" one. Situations that are particularly acute for the facially disfigured are entering school for the first time, reaching puberty when heterosexual relationships begin to be established or at least considered, entering the working world and finally at the time when marriage is contemplated. In these various situations withdrawal and hiding are the more usual patterns of behavior on the part of the disfigured, not only because they are likely to have been treated in this manner by their parents but because the attitudes of others toward them (curiosity leading to staring) have made these forms of escape the easiest. This is particularly true for individuals who become disfigured in adulthood. They are very likely to decrease their participation in social and interpersonal activities.

Denying the disfigurement, as Bryt has shown some parents do, may help the child when he is small but does cause him difficulties as he gets older and as he enters into wider social relationships, particularly when he begins to take an interest in the opposite sex. The adolescent boy or girl with facial disfigurement may come up against an actual situation of being rejected by a member of the opposite sex. This causes great anxiety and confusion on his part for he has been led to believe that his disfigurement does not exist or at least is minimal. The point of view in which the disfigurement is accepted and where there is open discussion of it leads to a more successful mode of adjustment. In the discussion of the problem with the child a consideration of the ways and means of correcting the deformity as far as possible should be included. If corrective surgery is not possible there should be an attempt to have the handicapped child feel that he can lead a successful mode of life despite his handicap. This point of view has been particularly stressed by Grayson, that of having the physically disabled learn to accept not only themselves as they are, but to recognize the fact that others will discriminate against them. *(4)*

REHABILITATION

Generally speaking problems of the guidance and rehabilitation of the facially disfigured are no different from those of other handicapped persons whether children or adults. Some problems, however, are perhaps specific to or acute for the facially disfigured. One problem is that of vocational adjustment and placement. Only one study has been reported on the facially deformed in relation to kinds of work in which they found employment. This study carried on in Germany by Lange in 1933 was limited to 55 adult patients with lupus. He found the patients were in general rejected by their families, resigned and quiet in behavior, and at work in positions below their ability level *(5)*. Although the

field as a whole is still largely unexplored systematically, there are some references in the literature to positions from which the disfigured are excluded. Some employers feel that the presence of a person with a facial deformity would not be tolerated by other employees or by customers *(8)*. Employment where the disfigured individual is placed in an inconspicuous location or where he can work unobserved seems to be what some employers might accept and what some facially deformed themselves desire *(8)*.

Sometimes a disfigured individual may want to flaunt his face in public so as to elicit revulsion on the part of others since this is the only way he feels he can "fight back." *(7)* On the other hand, sometimes a person with a gross deformity just assumes he will be accepted and that he can do the work any individual can do. The problem of adjustment to work may be enhanced and complicated by the fact that there is both facial disfigurement and actual physical handicap involving the sensory or motor apparatus (deafness, blindness, paralysis of the limbs). In these cases it is self-evident that vocational counseling is of paramount importance.

A second consideration which includes a whole series of problems is that of plastic surgery: whether or not surgery can be undertaken in a given case, what the cosmetic effects will be, how the deformed individual feels about surgery, what his expectations about it are. Economic as well as social and emotional problems are also included. During the last 15 years plastic surgery has developed phenomenally and techniques have been perfected which make it possible to do a great deal of successful reconstructive and corrective work upon the face. Often the effects of plastic surgery upon patients has not necessarily been commensurate with esthetic results. Some patients are greatly satisfied with the surgical results while others are only partially satisfied. Some individuals may even be dissatisfied and greatly discouraged by what they feel has been unnecessary pain, expense and time spent. Some patients are greatly pleased with only minor improvements. Generally speaking, the complainers, those who feel their faces are the source of all their difficulties in interpersonal relationships, are the most likely to be displeased with operative results. Noncomplainers are likely to be more satisfied. Bryt has found that patients who believe that as soon as there has been cosmetic improvement they will feel much better in daily living and towards others, are likely to be disappointed. They are little aware of the fact that it takes more than an external change in facial appearance to bring about changed feelings about themselves and about their feelings of others toward them.

In some patients, it is hard for them to believe that their

appearance is altered after surgery. Others may become exhilarated by the surgical results only to feel let down when they have to contend with new experiences in the world around them. However, nearly all patients feel relief if the cosmetic result achieves two goals: one that the disfigurement no longer looks like a congenital one, and, second, that the improvement is such that they feel they are not stared at so often in public places. Patients who have or who can accept a realistic idea of just what to expect from plastic surgery, who have had a chance to discuss the reasons why they want to accept corrective surgery, and who have been told by the surgeon about what to expect by way of improvement or change, can adjust the more successfully to the surgical results. Where plastic surgery brings about functional as well as cosmetic improvement, that is in cases where eating, talking, or breathing is facilitated, this improvement helps a great deal in progress toward rehabilitation.

It must be remembered that there are a great many individuals with mild or moderate disfigurement who never request plastic surgery and who do not feel that their faces are a particular deterrent to successful living. It is only where they do feel so and blame their difficulties on their face that they are likely to request correction. For the latter the plastic surgery may or may not be helpful. It is here that the greatest clarification needs to be made as to why surgery is wanted, and what expectations the individual envisages as a result. These individuals do need some kind of rehabilitation toward mental health and by operating on them the surgeon often runs the risk of creating greater discontent and even of precipitating more severe or acute emotional crises. Various investigators have stressed the importance of screening patients carefully for plastic surgery, particularly patients with mild or slight disfigurement. Macgregor and Schaffner have presented case material in which both sociological and psychiatric factors are shown to operate in patients requesting nasal plastic operations, and they have suggested ways for evaluating these factors *(9)*. Linn and Goldman have given case studies to show how patients requesting rhinoplastic surgery have used the nose as a symbol for deeper underlying emotional conflicts *(6)*.

In some instances, plastic surgery is counter-indicated. The reasons for this are several: surgery may not be at all possible from the medical point of view, the surgery may bring about no cosmetic improvement and may even produce unfavorable results. There are some cases where surgery is not advised due to the severe emotional disturbance of the patient or due to an actual psychosis on his part. In the latter instance the request for surgery may be completely irrational or the expectation of results

212229°—52——9

may be entirely out of keeping with what can actually be accomplished. As Bryt has indicated, these expectations not only are related to cosmetic results but are related to what the patient feels the cosmetic results will do in bringing about suddenly and almost magically great changes in the attitudes of others toward him *(10)*. It is these cases where psychiatric screening for surgery is of paramount importance.

Nearly all individuals who plan to undergo corrective surgery can profit from some counseling and clarification of their problems. They can benefit from discussing their aspiration and fears as these related to the surgery itself and to their adjustments after surgery is completed.

At the present time where extensive surgery is done as in cases with malignant growth on the face or in the oral cavity, there may be gross deformity not from the disease itself but from the radical surgery. In such cases, preparation for the disfigurement can help reduce the subsequent shock. An individual who may expect only a slight facial scar or irregularity of the jaw after an operation, may be thrown into a severe panic when he discovers for example that his lower jaw has been removed from both sides, that his features are completely altered and that he is unable to eat anything but liquid food. Here certainly careful and judicious counseling is indicated. Plastic surgery in many cases may ultimately reduce the disfigurement but these patients still have many problems. They not only have their disfigurement to contend with but they have considerable anxiety and uncertainty about its improvement after corrective surgery, about the disease process itself that necessitated the initial surgery. Their anxieties are likely to be ones which they are unwilling or unable to bring out into the open.

Psychotherapy for the facially disfigured has as yet not been explored to any great extent. It is a mode of treatment, however, that would not seem to be specific for them, but is one for individuals who are emotionally disturbed whether or not they are handicapped physically and who are unable to work out their difficulties by themselves or with the help of counselors and social workers. An area that might make a good point of research would be group psychotherapy with the facially disfigured, to discover whether or not they might profit more from working out their problems in a homogeneous group of facially disfigured or in a heterogeneous one where they come up against the non-deformed but who have emotional difficulties also.

PUBLIC EDUCATION

It would be no simple task to change the attitudes of society as a whole toward facial deformities. However, there are some ways in

which an attempt can be made. For one thing, everything possible should be done toward helping the mothers of disfigured small children develop an accepting attitude toward them. The mother of a child whose face is congenitally deformed like the mother of any child who is born with a physical handicap is likely to feel guilty, believing she has been the cause of the deformity. A first approach to the mother would be to try to reduce or prevent such an attitude from developing. Bryt has suggested that this can best be done by having the obstetrician and nurses who attend her, aid the mother face the fact of the disfigurement in a realistic manner rather than assume either an attitude of denial of the defect or one of pity. The physician has a very important role to play for it is he who can remove erroneous beliefs in the mother concerning the cause of the baby's disfigurement, and who can explain to her the improvements in appearance that may be expected from plastic surgery.

Teachers can also be of invaluable help to disfigured children if they can view or learn to view the deformity as a real situation but not one that is sure to make the child maladjusted. The teacher can have the child discuss his disfigurement in class and help him dispel his worries about it, especially his anxieties concerning the way the other children feel about him *(10)*. The teacher can assist the deformed child in becoming a part of his social group of peers and hence help indirectly in his relationships in his family as well.

In addition to teachers, nurses, social workers, family physicians, psychiatrists and organized or informal groups of parents of deformed children can serve an important function in influencing the community toward assuming a less prejudiced attitude toward facial disfigurement. Placement and guidance counselors as well as other workers dealing with facially disfigured adolescents and adults can influence public opinion in the contacts they make with the community just as they do for other individuals who are discriminated against because of physical, mental or cultural handicap.

REFERENCES

1. Baker, W. Y., and Smith, L. H.: *Facial Disfigurement and Personality.* J.A.M.A. 112; 301–304, 1939.
2. Bettman, A. G.: *Psychology of Appearance. Northwest.* Med. 28; 182–185, 1929.
3. Blair, V. P.: *Facial Abnormalities, Fancied and Real; the Reaction of the Patient; Their Attempted Correction.* Instit. of Medicine Chicago Proceed. 8; 217–223, 1931.
4. Grayson, M.: *The Concept of Acceptance.* J.A.M.A. 145; 893–896, 1951.
5. Lange, J.: *Facial Lupus and Personality. Charac. and Personal.* 2; 117–126, 1933.

6. Linn, L. and Goldman, I. B.: *Psychiatric Observations Concerning Rhinoplasty.* Psychosom. Med. 11; 307–314, 1949.
7. Macgregor, F. C.: *The Sociological Aspects of Facial Deformities.* Master's thesis, Univ. of Missouri, Columbia, Missouri, 1947.
8. Macgregor, F. C.: *Some Psycho-Social Problems Associated With Facial Deformities.* Amer. Sociol. Rev. 11; 629–638, 1951.
9. Macgregor, F. C. and Schaffner, B.: *Screening Patients for Nasal Plastic Operations.* Psychosom. Med. 12; 277–291, 1950.
10. Macgregor, F. C., Abel, T. M., Bryt, A., Lauer, E., Weissmann, S.: *Facial Deformities and Plastic Surgery, a Psycho-social Study.* To be published by Charles C. Thomas, Springfield, Ill.
11. MacKensie, C. M.: *Facial Deformity and Change in Personality Following Corrective Surgery. Northwest Med.* 43; 230–231, 1944.
12. McClelland, E. S.: *Minor Plastic Surgery and its Relation to Inferiority Complexes. Med. Rec.* 146; 419–424, 1937.
13. Updegraph, H. L. and Menninger, K. A.: *Some Psychoanalytic Aspects of Plastic Surgery. Amer. J. Surg.* 25; 554–558, 1934.

THE DEAF

Edna S. Levine

DEAFNESS AND THE DEAF: GENERAL ORIENTATION

Certain areas of physical disability lend themselves to the establishment of an emphathetic bond more readily than others. They may possess more visible appeal; more poignant manifestations. There is greater emotional incentive to arouse popular interest and sharpen understanding. Occasionally, in fact, such areas are overburdened with too much emotional responsiveness on the part of both the public as well as the beginning worker.

There are other areas, however, in which exactly the opposite situation prevails. These concern the 'invisible' disabilities whose impairments offer little if any outward evidence of their existence and few clues as to their possible effects. The present discussion is centered about a population suffering one such disability: the Deaf.

The deaf and popular misconceptions

In popular parlance, the term Deaf is used to designate any type of auditory impairment, ranging from slight to profound and of any cause whatsoever. Actually, there are various different categories of hearing impairment. The designation "Deaf" represents only one type. It is, however, the most unique. Its singular quality stems from the fact that individuals so affected are the only ones of all the hearing impaired population in whom the major portion if not the whole of life development takes place without benefit of effective auditory contact with the environment. It is this tremendous psycho-acoustic barrier to the world of words, thoughts, ideas, and innumerable subtleties of social intercourse that constitutes the core of the handicap of deafness. In the other groups, acoustic experiences play or have played a normal developmental role, despite the presence of impaired hearing.

To the hearing world, however, deafness offers no moving appeal to the imagination nor does it possess much in the way of dramatic challenge to either the sympathy or interest of the casual observer. No hearing person can ever separate himself from all his heard experiences to even begin to approximate the feel of what growth and development in a world of stillness must be like.

The results have for centuries been reflected in gross misapprehensions of deafness on the part of the public at large. Throughout all this long time the deaf have been variously regarded as uneducable; as idiots; fools; children; queer; comic; depraved; odd; weird. Their inability to speak was mistakenly considered to represent an additional peculiarity, unrelated to the hearing loss and unresponsive to instruction. The terms "mute" and "dumb" were accordingly added to their burden.

Clarification of terminology

Within the field there exists a profusion of terms which have been coined to satisfy a wide variety of needs, points of view and emphases. There are, for example, such terms as: deaf, deaf-mute, mute semideaf, semimute, deafened, partially hearing, hard of hearing, etc. In all this confusion of profusion, not only the layman but also the professional worker is often quite at sea.

There are three classifications into which the vast majority of the hearing impaired may be effectively allocated: (1) the Deaf; (2) the Hard of Hearing; and (3) the Deafened. The differences among these groups stem from the twin considerations of: (1) Age of onset of hearing impairment; and (2) amount of hearing loss.

If the loss is slight (about 1 percent in the speech range), it is not expected to alter the normal course of an individual's life activities at any age. If it occurs in childhood, it will have no appreciable effect upon the normal course of psycho-educational development; and few, if any, special measures have to be taken to compensate for this condition. As the loss approaches 25-30 percent, however, difficulties will arise; and special measures and devices are required to maintain effective auditory contact with the environment. This contact can however be maintained without appreciable disruption; and, in the case of children, the normal of psycho-educational development, although presenting more problems, can be similarly maintained. Those whose hearing loss is of this nature (mild to moderate) are considered to form the core of the Hard of Hearing population.

Passing over the peripheral area of this group, we come to those groups characterized by marked or profound hearing loss (about 50 percent or greater in the speech range). And again considering the core populations, we find that in the case of such hearing loss normal auditory contact with the environment has suffered major disruption; that normal acoustic perception of words, thoughts, ideas, daily background sounds, is either severely distorted or at an end.

When such a condition exists since birth, the child learns nothing substantial through the ear—not even how to talk. Highly spe-

cialized methods of instruction must be employed in his education; and all his learning experiences take on a characteristic 'artificial' flavor. When profound hearing loss occurs during the childhood period of speech and language development, normal development of these skills ceases; special methods of instruction must be employed. Such a child will, however, have the decided advantage of some normal experiences with speech and language concepts which the child born deaf has never had. If the child is very young, however, these concepts gradually fade from his memory and for all practical purposes, he is on a par with the child born deaf. The most severe psycho-educational blow falls when profound loss occurs before the age of about 5 years. This is estimated to be the case in approximately 80 per cent to 90 per cent of the deaf population *(1)*. As we progress up the age scale of time-of-onset of hearing loss, previously acquired auditory, speech and language experiences are found to help the child immeasureably in surmounting his acoustic deprivation, even though special educational methods are still required. Those whose hearing loss is of this nature (marked to profound; early onset) are considered to form the core of the Deaf population.

Continuing further up the age scale of time-of-onset of profound hearing loss, we come to the age range where the onset has struck too late in life to have any effect upon early psycho-developmental patterns or learning experiences. This is the case with those who become deaf during adulthood, a notable example of which are the war-deafened. Even though such adults might not hear a sound, the psychological chasm between them and the Deaf is so great as to render ridiculous the thought of classifying both in the same group. Their special speech and lip-reading requirements do not alter the picture, even though they may meet the Deaf on common ground in regard to these instructional needs. Those whose hearing loss is of this nature (profound; late onset) are considered to form the core of, for want of a better term, the Deafened population.

In conclusion, the following classification, proposed in 1937 by the Committee on Nomenclature of the Conference of Executives of American Schools for the Deaf is presented as the one most generally accepted at the present time:

> THE DEAF: Those in whom the sense of hearing is nonfunctional for the ordinary purposes of life. This general group is made up of two distinct classes based entirely on the time of hearing loss:
>
> (a) *The congenitally deaf.*—Those who were born deaf.
>
> (b) *The adventitiously deaf.*—Those who were born with

normal hearing but in whom the sense of hearing became non-functional later through illness or accident *(2)*.

On the one hand, the unique psycho-developmental involvements that characterize the deaf group are implied rather than defined in this broad classification; but on the other, confusing, debatable side issues are eliminated as well.

Incidence

An estimate was computed in 1938 by Gordon Berry *(3)* on the bases of: the number of pupils currently enrolled in schools for the deaf; the average time of school attendance; and the average life expectancy of deaf individuals. The total number of deaf in the United States was thus calculated to be 121,878.

The deaf are thus seen to occupy a very small place in society, numerically speaking, both when compared to the population at large as well as to the total number of acoustically impaired individuals. This latter group has been estimated to include well over a million schoolchildren alone throughout the United States. It is understandably difficult then for society to become familiar with the special needs and problems of so small and widely scattered a group as is the deaf.

Cause

The type of deafness here discussed is called Nerve or Perception deafness. It is a sign of organic impairment of the Auditory nerve and/or any of the other structures involved in sound perception by reason of disease, injury or faulty development. In some cases, the sound conduction apparatus is also involved. For such cases, the term Mixed Deafness is used. To date, there is no known cure for Nerve Deafness, nor does the use of an individual hearing aid appreciably alter the situation in cases of profound loss.

According to the National Health Survey of the United States Public Health Service in 1936 *(4)*, it was found that of deafness among schoolchildren, 62 percent was present at birth, i.e. congenital; while 38 percent was acquired after birth, i.e. adventitious.

The most common causes of congenital deafness are: hereditary factors; congenital syphilis; intrauterine or neonatal meningitis; severe birth trauma; anoxemia at birth; harmful drugs taken by the mother during pregnancy; and exanthematous maternal infection during pregnancy, as for example German Measles. In the etiological surveys presented by Best *(1)*, there is always to be found as well a small percentage of congenital deafness of unknown cause.

The most important causes of adventitious deafness are the infec-

tious and contagious diseases to which children in particular are especially vulnerable. Best *(1)* states that scarlet fever and meningitis together are responsible for practically one-fourth of all deafness.

A common error when designating cause is the interchangeable use of the terms "congenital" and "heredity". These are *not* synonymous terms. "Congenital" does not refer to cause but to *time*. "Hereditary" on the other hand refers only to *cause*. Hereditary deafness need not be present at birth but may make its appearance later in life. It is transmitted according to the Mendelian pattern.

In recent times, the use of Antibiotics has spared many an individual, especially children, the sequela of deafness. Similarly, the area of "congenital deafness—cause unknown" is responding to research investigations, some of which have already revealed the nature of certain heretofore unknown causes and introduced measures for their control. It has, for example, been established that German Measles (Rubella) infection in the mother during pregnancy is one such cause *(5)*. Present studies of the influences of the Rh blood factor in causing deafness may establish another.

Detection and differential diagnosis

The detection and diagnosis of deafness are frequently highly complicated matters; for they revolve usually about children, often very young children, who have neither speech nor language. In spite of this, the earliest possible detection and assessment of hearing loss must be carried out to establish such a child's educational needs as soon as possible and through this his whole future pattern of life.

In the case of children who suffer deafness either since birth or before the establishment of speech and language, the first suspicion of hearing impairment may be aroused by: *(1)* their failure to speak at the expected time; *(2)* their inability to understand spoken language; and *(3)* the absence or the inconsistency and selectivity of their response to sounds. These signs are, however, not always indicative of impaired hearing. There are other conditions completely unrelated to hearing loss that call forth similar response patterns.

This presents the first point of diagnostic complexity; for in the absence of a history of hereditary factors, febrile state, or exanthematous maternal infection during early pregnancy, it cannot be assumed that deafness exists on the basis of these signs alone. The fact that a young deaf child usually responds to some sounds may further obscure the picture. To the lay person, residual hearing is an unfamiliar entity, and a child who responds to sound could not possibly be deaf! This is, however, fallacious. Deaf children do as a rule respond to many sounds.

Still more complexities arise in the course of diagnosis. While it would settle matters if the otologist could unequivocally establish the presence or absence of hearing impairment in the very young child, this cannot always be done, particularly when the medical history is negative. For one thing, organic damage of the sound perception structures can only be inferred for they are too deeply placed to be visible. For another, the responses of young children to various sound production test-devices are frequently unreliable. Even the conditioned response tests are not immune to the effects of the child's capacity, ability and willingness to cooperate.

In many instances, the most that can be expected of such examinations is the examiner's impression as to whether or not the child appears to be deaf. If the impression is that of an expert, its worth is immeasurably increased.

It is not unusual for other professional disciplines to be called upon. These may be any one or more of the following specialists: the speech and audiometric expert; the psychologist; the psychiatrist; the neurologist. Further diagnostic clues are sought. The child's voice quality may provide one, or its reaction to sudden sounds and commands; or the child may utter isolated expressions in imitation or spontaneously; or hum a tune though never having uttered a word in his life; his general behavior, idiosyncracies, his mental capacity may provide clues; neurological examination may reveal organic brain damage hitherto unsuspected. All of these indicators and more add their respective 'yeas' and 'nays' in debatable cases until a diagnosis is ultimately established.

Other conditions that are often found to simulate the appearance of deafness in the young child are any one or combination of the following: Mental Defect; Emotional Disorder; Organic Brain Damage and notably Aphasia; Mild Hearing Loss. It is unfortunately not unusual to find children suffering these disabilities mistakenly placed in schools for the deaf and to find deaf children mistakenly placed in institutions for the mentally defective.

In the cases of those children who become deaf after the development of speech and language, the diagnostic problem is not nearly as difficult. Such a child can state his problem and participate in audiometric procedures. An estimate of the amount of hearing loss may, in the beginning, be rendered less accurate by the child's emotional reaction to the suddenness of his new condition of deafness. Frequently, such a child imagines he hears nothing; for he has not yet trained himself or been trained to perceive less audible sound stimuli. Another may pretend he still hears perfectly; and will respond to anything, everything, and nothing to maintain this fiction. In time, such reactions will level out and accurate audiometric readings can be obtained. It can

then be ascertained whether a particular child should be educated as a deaf child or as a hard of hearing child.

Notwithstanding the difficulties involved, the early diagnosis of what may appear to be deafness in a young child is critically important. It is upon such diagnostic findings that his future depends in establishing as soon as possible whether he is a deaf child; a hard of hearing child; a child suffering quite another type of disability; or a perfectly normal child but with special emotional problems.

THE WORLD OF THE DEAF

Of the varied definitions and statistics relating to deafness, not one is capable of bringing the reader close to the world of the deaf person. Accordingly, a generalized sketch of such a world is presented in the hope that it will give psychological substance to the definition in more meaningful and realistic terms.

Consider for a moment a child born into an environment rich in physical comforts and emotional harmonies but from which all sound is eliminated by reason of his deafness. What then is left?

For the baby, it is a world bereft of the soft cooings of his mother; there are no lullabies to rock him to sleep; no sound of laughter. There are no mewing kittens, nor barking puppies, nor chirping birds; no squeaky toys nor rattles; no clapping hands. There is no rustle of garments nor sound of footsteps about his crib to tell him that he is loved and not alone. His own gurglings are lost in stillness as is all the warmth with which sound enriches an environment. It is a strange, cold world indeed without one meaningful sound to stimulate feeling or give meaning to what is seen.

As the child grows older, he gazes with questioning eyes upon the silent motion-picture like world unfolding about him. The only situations which have appropriate meaning are the few with which he is already familiar. Everything else remains an enigma; for the "Why?" of a dawning curiosity is denied him. He has no words. He is occasionally overwhelmed by uncontrollable fears and impulses to rebellion that surge through him; but to no avail. The walls of silence hold fast. The growth of social conscience implanted in the hearing child with its mother's first cross tone of voice must take an entirely different course of development in the case of the deaf child.

In most cases, this truly improverished 'average' environment is rendered even more puzzling by the activities of its hearing members. The small deaf child is just as bewildered and angered by their inability to understand him as they are by his inability to communicate with them.

There are all kinds of "first" reactions on the part of the parents

of small deaf children. There are: panic; feelings of guilt and shame; despondency; rejection; and in many instances fierce overprotection of the child. When sensible adjustment is made by the parents, half the battle is won. But in countless others, there are, determined efforts to convert the deaf child into a hearing one as soon as possible by hopeless, endless floundering from doctor to doctor in search of cures; or when this fails through the application of all possible devices and measures available through special instruction, whether the child be ready or not. And at the opposite extreme, there are always those children who are 'abandoned' to the school to do with as it chooses.

All of these tensions and panic reactions on the part of so many parents of deaf children further distort the child's world and threaten his precarious balance in it. Even in those cases in which a wholesome approach is made, frustrations of communication alone may scar the most formative years of a deaf individual's life.

Education is his salvation; and language, his emancipator. But even the special methods of instruction are limited in their ability to pierce the walls of silence rapidly enough to bring about a normal pace of development. The great retarding influences arise from the very slow process of language instruction. New language concepts must wait until the old have been mastered. There is no spontaneity of expression; relationships must be pointed out; generalizations made specific; whole paths of learning must await sufficient vocabulary and language mastery before they can be entered upon.

The pupil is mentally dependent upon his teachers for the very wherewithal of thinking-language; he may wonder about many things, but he can seldom formulate explanations without their help. In many instances, this enforced mental dependence becomes a life pattern of dependence.

When the teaching of speech is included in this truly amazing instructional feat, the deaf pupil must remember the voice and breath qualities as well as the correct tongue-teeth-lip relationship for every sound of every word he learns. In lipreading he must be able to identify words and ideas from a speaker's lips through rapid synthesis of the visible tongue-teeth-lip relationship into a meaningful whole. It is not to be wondered, then, that there is a resultant lag between mental capacity and educational achievement throughout the whole of the average deaf individual's life.

Further, the emotional development of the deaf can scarcely remain unaffected by these barriers to comprehension. Language and sound both play important parts in emotional development. Without adequate intellectual comprehension of a situation, the appropriate emotional response may well be blocked. Lan-

guage is the key to intellectual comprehension. The significance of natural phenomena, of everyday occurrences, social values, relationships, customs and taboos of the most elementary order must await sufficient understanding before they can have valid intellectual meaning and through this appropriate emotional appeal for the deaf individual. Nuances, subtleties, shades of difference and humor produced by vocal inflection and intonation are similarly thwarted in their emotional appeal to those who cannot hear.

Such, then, are the circumstances surrounding the psychological aspects of deafness. The intellectual, social and emotional growth and development of the deaf are all crucially involved. It is only through highly specialized methods of education that the deaf child can be brought into effective intellectual, emotional and social contact with the world about. The deaf adult will ultimately reveal through his patterns of behavior the success with which this was accomplished.

INDIVIDUAL DIFFERENCES AMONG THE DEAF

The deaf as a group include as heterogeneous an assortment of individuals as do hearing groups—and perhaps even more so. For one thing, all of the individual differences among the hearing are operative here as well, such as: mental endowment; inherent predispositions; health factors and (additional) physical disabilities; special talents and aptitudes; socio-economic factors; general influences of the home; and available opportunities for self-enrichment. There are numerous other influences toward heterogeneity inherent in the factor of deafness and its psycho-educational implications, including: (1) age of becoming deaf and amount of normal acoustic experiences previous to deafness; (2) amount of hearing loss; (3) age of beginning school; (4) types of schools attended and methods of instruction employed; (5) length of time of school attendance and amount and type of vocational training and/or higher education acquired; (6) types of communication skills employed with other deaf as well as with the hearing; (7) effectiveness of the deaf person's communication contacts with the world about, *including members of his own family;* (8) presence of other deaf members in the family; (9) types and amounts of social outlets available; and (10) the emotional reactions of the family to its deaf member and its effects upon him.

Since so many of these factors are related to the deaf person's educational experiences in the broad sense, certain specific aspects of these experiences will be discussed in detail at this time in relationship to the heterogeneity of the deaf group.

For all its small size, the field of the deaf is itself singularly 'heterogeneous' in regard to varieties of instructional techniques and educational philosophies espoused. These center about: (1)

the type of school best suited to the needs of the deaf child; and (2) the most desirable method of instruction.

Dissension exists between those who see the residential schools as ideally suited to meet the unique needs of the deaf child both educationally and socially; and those who contend that the place for all children including the deaf child is with the family and that the dangers of institutionalization lie in residential schools.

The methods of instruction employed in American schools for the deaf are:
(1) the Oral Method in which speech, speech-reading (lipreading), and writing are the chief means of instruction; (2) the Manual Alphabet Method in which the chief means of instruction are writing, and spelling out words and sentences on the fingers in straight language; (3) the Manual Method in which in addition to writing and the manual alphabet, the sign language is also used to express ideas through non-verbal conventional signs, gestures, positions and movements of the body, and facial expressions; (4) the Auricular Method in which the hearing of the pupils is developed to the greatest possible extent through training, and education is carried on chiefly by means of speech, hearing and writing; and (5) the Combined Method in which there is no adherence to any one method but which claims to use that best suited to a particular pupil's needs *(3)*.

Additional important sources of heterogeneity among the deaf concern the age of beginning school and the length of attendance. Both of these very variable factors depend in part upon the effectiveness of compulsory education laws for the deaf and in part upon the desires of the family and the will of the pupil. Further, the age of leaving school is also variable. As a result, there are throughout the country some deaf who start school at the age of 2 or 3 years; others who start at 8, 10 or 12 years of age; still others who may start during adolescence; and some who are never sent to school at all. Then, there are those who remain at school until the whole course of study is completed—for about 12 years; others who stay for only a few years; still others who may go for only a year or so to acquire some vocational skill; and a very small percentage who continue on into the colleges and universities.

Examining the effects of such variable influences upon the 'uniformity' of the adult deaf group, we find that the group actually consists of: those who can speak and read the lips; others who can speak but who cannot read the lips; still others who can read the lips but who cannot speak comprehensibly; and some who can do neither. Further, there are the deaf who communicate mainly through finger spelling and others whose main method is the sign language. Then there are those whose language skills are excel-

lent; and others who have not sufficient verbal language to read the simplest book nor construct the most elementary sentence. There are some deaf whose school-life contacts with their families have been limited to week-end and holiday visits home; and others whose family contacts have been close and intimate, either for better or for worse. There are those deaf who have no contact whatsoever with other deaf, because of family pressure, lack of opportunities or through personal choice; and there are others who have a full, rich social life with both the deaf and the hearing. There are some who cannot carry on effective communication with the members of their own families; and others who cannot communicate with certain members of deaf society. Then, there are the emotionally disturbed and the emotionally adjusted. And finally, there are the deaf who are masters of all methods of communication; and others who are masters of none. And within the range of all these extremes, there are so many combinations of abilities and degrees of skill, adjustment and attainment as to completely overwhelm the novice and frequently many experienced workers in the field as well.

This "heterogeneous" state of affairs makes rehabilitation work with the deaf a highly individualized procedure. Each case must be analyzed and evaluated on the basis of its own particular combination of variable background influences as they are reflected in the adult "end product". It is through understanding the relationship between these influences and the individual's present lacks, abilities, potentials and needs that his true handicaps can best be appreciated and his rehabilitation requirements most effectively met.

PSYCHOLOGICAL EXPLORATIONS

Many were the questions that roused the interest and piqued the curiosity of the early observers. What, for example, might the effects of this unusual form of deprivation be upon the mental development of the deaf; upon their thinking and learning abilities; upon their social adjustment? Is there a difference between the 'psychology' of the deaf and of the hearing? Are there particular traits of behavior and personality characteristic of the deaf? How far can education go to compensate for the psycho-social barriers incurred by deafness? What of the place of the deaf in society?

Opinions of authorities

The earliest attempts to answer questions such as these were made by the philosophers, the scientists and especially by the educators of the deaf, based mainly upon personal observations, experiences, and convictions. Each observed the phenomenon

of deafness from a different perspective. As a result, their opinions were characterized by a notable lack of agreement.

The situation is but little improved. Certain areas of divergent thinking have been touched upon previously, particularly in regard to types of schools and methods of instruction. Others, relating to the psychological aspects of deafness are here presented as concise contrasts taken from Brunschwig's presentation *(6)* of the opinions of authorities:

1. *Contrasting opinions concerning temperament and disposition—*

"It is generally maintained that deaf-mutes are by nature more inclined to viciousness than hearing persons. They are said to be spiteful and obstinate, unruly and intolerable, malicious and irritable, suspicious and irascible and the like." (Druschba, 1913, p. 12)

"The deaf are cheerful, swayed by the same emotions as other mortals, responsive equally to all the touches of life, and are not, at least in these days of education, a morbid, brooding, passionate folk, as is too often the popular judgment." (Best, 1914, p. 18)

2. *Contrasting opinions concerning personality and adjustment—*

"The auditory deficiency will always have an unfavorable influence both on behavior and on the underlying personality." (Biffl & Freunthaller, 1929, p. 15)

"I have noted comparatively few psychoses among adolescents, and this further indicates the excellent mental equilibrium they achieve and maintain." (Wile, 1933, p. 17)

3. *Contrasting opinions concerning emotional traits—*

"There seems to be a general agreement that the deaf child is apathetic and listless as compared with the average hearing child." (National Research Council, 1929, p. 16)

"Contrary to the opinion of those who know nothing of this group of handicapped persons, the deaf mutes are a happy lot. I attribute this to the fact that the affliction of most deaf-mutes has been caused by diseases of childhood; therefore it comes at an early age, and the child does not realize what he is missing." (Curtis, 1931, p. 18)

4. *Contrasting opinions concerning social relations—*

"The deaf feel as much out of place among the hearing as the hearing among them. Socially, they are perhaps more isolated than the blind." (Kaercher, 1933, p. 22)

"The deaf are by no means an isolated class. They work extensively side by side with the average run of hearing men and women in offices, shops and factories, and have many good friends among them." (Smith et al, 1929, p. 23)

5. *Contrasting opinions concerning the difference between the psychology of the deaf and hearing—*

"It is a self-evident proposition that the deaf person is not a normal individual. The deviations from the normal may be noted in his body, in his mind, and in his emotions." (Lowry, 1912, p. 6)

"Their process of thought, their method of reasoning, their modes of expression are the same as those of hearing persons . . . (Gallaudet, 1910, p. 7)

Among all these divergent views, the principle points of agreement concern the responsiveness of the deaf to education (although in this regard there is disagreement as to method), and the educational retardation incurred by deafness.

Psychological Investigations

One great value of standardized psychological measures lies in the fact that they eliminate the influences of subjective 'feelings' and personal bias insofar as possible in the evaluation of various aspects of behavior. Accordingly, when the use of such measures was first introduced into the field of the deaf, it was hoped that here at last were the means for reducing the area of diverging views.

This has not proved to be the case—not thus far at any rate; for the psychological measures themselves have not proved immune to the complex problems presented by deafness. It should be noted, however, that standardized procedures are of relatively recent origin in the field of the deaf; and that the investigations to be presently considered are in many instances pioneer explorations in this psychologically unchartered area, with much more work yet to come.

Intelligence and educational achievement

It must not be assumed that such factors as intelligence, educational achievement and emotional adjustment function separately in human behavior because they are tested separately in psychological procedures. They are tested separately for reasons of convenience. Their mutual interplay is strikingly evident in the case of the deaf, and particularly so in regard to the relationship between intelligence and achievement.

There is no reason to believe that the innate mental endowment of the deaf was any lower in bygone times than today. But deprived of the "nourishment" of education, this innate intelligence remained scarcely more than an undeveloped capacity, a state of endowment without attainment.

We are told that:

> "A deaf-mute before he has been taught language, either the finger language or reading, cannot carry on a train of reasoning any more than a brute * * *
>
> "You will find accordingly, if you question a deaf-mute who has been taught language after having grown up, that no such thing as a train of reasoning had ever passed through his mind before he was taught" *(7)*.

When educating the deaf had become a commonly accepted practice, it was obvious that there were differences in intelligence

212229°—52——10

which gave rise to numerous educational complexities. In addition, as the deaf were sent out from the schools, the question arose as to how they compared in intelligence with the hearing society of which they were expected to become a part. Pintner and Paterson *(8)* attempted to answer these questions in 1915 through the use of the Goddard Revision of the Binet-Simon Intelligence Scale.

It had been devised for use with the hearing and as such was a verbal scale of the question-and-answer type, totally unsuited for deaf subjects who could neither understand the language of the test-questions nor the 'pretend' situations of the test-problems. These investigators concluded (mistakenly in this writer's opinion) that verbal intelligence tests in general could not be used with the deaf.

Since that time, investigations of the intelligence of the deaf have been carried out almost entirely by means of performance tests or other nonverbal and nonlanguage measures. The studies themselves have yielded contradictory findings. On the one hand, Pintner *(9)*, Reamer *(10)*, Lyon et al. *(11)*, Petersen and Williams *(12)*, Zeckel and Van der Kolk *(13)* report the mental capacity of the deaf subjects to be about ten to fifteen I.Q. points lower than that of the hearing; while on the other hand, Goodenough and Shirley *(14)*, Drever and Collins *(15)*, Springer *(16)*, Burchard and Myklebust *(17)*, Lane and Schneider *(18)* report no significant differences in intelligence. In some instances, investigators employing the same tests report contradictory findings.

Since the tests used thus far with the deaf are measures of "concrete" intelligence, the question of the "abstract" intelligence of this group is still an open one. In order to probe more deeply into the overall pattern of "deaf" intelligence than is possible with nonlanguage techniques alone, the present writer has resumed investigations with verbal measures *(19)*. The most promising has proved to be the Wechsler-Bellevue Scale for the Measurement of Adolescent and Adult Intelligence *(20)*. This measure has two decided advantages over others: (1) it has provision for the assessment and comparison of both concrete and abstract intelligence; and (2) the verbal portion of the test differs from that used by Pintner and Paterson in that it is simply worded and contains practical, common-sense test-questions most of which are within the range of "deaf" comprehension and imagination. Further, the verbal portion is easily administered in any method of communication desired by the subject. Numerous facets of "deaf" thinking, entirely obscured in nonlanguage testing, are made visible. The general results show the hearing to have a significant advantage in the area of abstract intelligence, but none in the area of concrete intelligence.

A review of these various investigations of the intelligence of the deaf shows that, at worst, the deaf as a group are not too far below the mental level of the average hearing, and, at best, are well within this range. Further research will undoubtedly clarify the finer, qualitative aspects of "deaf" thinking and intelligence about which we have much to learn.

As for educational achievement, all investigations show the deaf as a group to be considerably behind the hearing in this regard. The average retardation is held to be from three to four years. It has been found to be slightly less for the selected deaf group attending day schools; and considerably less for those who became deaf after the age of about six years *(21)*.

The slow arduous process of learning language is largely responsible for this educational retardation. It is impossible within the space of a school day to teach the deaf pupil as much foundation material as he needs to know. As a result, there is not only a wide gap between the educational achievements of the average deaf pupil and the average hearing pupil, but also between the mental potential of the average deaf individual and his actual scholastic attainments. It is very likely that continued instruction of the deaf after graduation might lessen both of these gaps.

For purposes of illustration, the following uncorrected "Daily News" compositions are presented to show an evolutionary stage of deaf language and thought development. The writers are congenitally deaf pupils of about thirteen years of age, of above average intelligence and are considered good to superior pupils.

An Accendent

Friday while I was at home, I had an accendent. I was in the living room, when my mother called to me to go to the dining room. Suddenly I sliped and fell down from the rug. I cried because my left foot hurt me. So the next morning, when I woke up, I could not walk. So my father took me to the doctor. The doctor took X-ray for my left foot. He fixed my foot, so I walk all right.

About the Newspaper

I read about the law was changed for margarine.

Most mothers who go to the grocery store for the margarine.

The margarine was made from vegetable and the color is white. Most of the people do not like white margarine and most of the people can not afford the butter. Butter is too expensive to buy it and margarine is less expensive.

Margarine will change in yellow in July.

After about four more years of instruction, the language of these pupils will be quite like "hearing" language.

In summary, it is evident that the deaf have come a long way.

It is education that has raised their level to one of human dignity and attainment.

Personality

Standardized studies of the personality of the deaf are in their early infancy. There is but one personality test that has been specifically devised for this purpose; and this one, unfortunately, has a restricted range of use *(6)*. Because of this drastically limited selection of measures, personality investigations among the deaf have had to rely almost entirely upon tests constructed for use with the hearing.

The use of such tests has aroused considerable dissension in the field. On the one hand, there are some investigators who maintain that since the deaf are living in a hearing world, they should be evaluated by hearing standards and judged by 'hearing' tests. But on the other hand, there are those who protest against the arbitrary assumption that the same traits of behavior and adjustment that imply normal development and signify normal reaction among the hearing serve the same function among the deaf.

Measuring personality is in general a highly complicated procedure not alone with the deaf but with the hearing as well; for personality is a dynamic totality far above the scope of any one test. The vast majority of so-called Personality Tests actually sample only single aspects of the total configuration, as for example: neurotic tendencies, special symptoms, specific traits of behavior, etc. This has been the case with standardized personality studies of the deaf as well.

Accordingly, the following digests of the results of various standardized personality investigations of the deaf in this country are grouped under the particular aspect of personality "sampled." With the exception of the Brunschwig study *(6)*, all of the others have been conducted by means of tests devised for use with the hearing. In each case, the summary-note refers to the experimental groups of the respective studies and is not intended as a generalization referring to the deaf at large.

1. *Investigations of Neurotic Tendencies*

   Lyon *(22)*: This investigator found that the percentage of deaf subjects rated as Emotionally Unstable; Should Have Psychiatric Advice was "more than twice that of college freshmen of approximately the same age." (p. 3)

   Pintner, Fusfeld and Brunschwig *(23)*: These investigators found the deaf to be "only slightly more emotionally unstable, only a little more introverted, and not quite so dominant as the normal hearing." (p. 326)

   Springer *(24)*: "All the groups of deaf children were found to receive much higher neurotic scores than the hearing control children." (p. 465)

   Springer and Roslow *(25)*: The findings of Springer's study

noted above were here confirmed, i.e. that the deaf subjects received much higher neurotic scores than did the hearing controls.

2. *Investigations of General Adjustment*

Brunschwig *(6)*: In all comparisons of scores, "the deaf averaged poorer adjustment scores than the hearing, differences between the means of the deaf and hearing being statistically significant in six out of twelve comparisons." (p. 132)

Kirk *(26)*: The results showed a significantly greater number of problem tendencies among the deaf than among normal hearing children.

Burchard and Myklebust *(17)*: The results here too showed a greater number of problem tendencies among the deaf subjects than among the hearing.

Springer *(27)*: This investigator, using the same measure as in the two studies immediately preceding, found little difference between the deaf and hearing groups; and, in fact, found that in certain items the deaf rated more favorably than did the hearing.

3. *Investigations of Social Maturity*

Bradway *(28)*: The results of this investigation showed the deaf subjects to be 20% inferior in social maturity to the hearing throughout all age levels examined.

Burchard and Myklebust *(17)*: The above results were generally confirmed by the findings of these investigators.

Streng and Kirk *(29)*: These investigators, using the same measure as in the two studies immediately preceding found their deaf subjects to be average in social maturity as compared with the hearing.

These studies appear to indicate that both the deaf child as well as the deaf adult are less well-adjusted than their hearing peers. The degree of maladjustment is seen to vary with the respective investigations. We cannot as yet tell if this is actually a true picture of 'deaf' adjustment, for the validity of the particular instruments of investigation when used with the deaf is open to question. Neither do these instruments bring us any nearer to an understanding of what constellation of traits and factors constitutes the normal deaf personality, or even if there *is* a typical "deaf" personality.

Other interesting studies employing different techniques have also been carried out with the deaf *(30)*. One such is an investigation conducted by this writer *(19)* in which the Rorschach Test was used. The general results revealed a characteristic personality configuration for each member of the experimental group

similar to that characterizing the group as a whole. The configuration differed from that normally expected for hearing peers. The "deaf" structure was characterized by marked rigidity, constriction, and conceptual and emotional immaturity. The personality factors forming this configuration were not at the periphery of personality, as might be the case if they were merely signs of instability or neuroticism. On the contrary, they formed the core of the *character structure* of the experimental group.

If such a character structure were encountered in a hearing individual, it would be considered abnormal. The presence of psychopathology would, in fact, be apparent in the individual's overt behavior. This latter, however, was not at all the case with the deaf subjects of the study. Their adjustment had been judged "normal" by a panel of experts, both deaf and hearing, who had been familiar with the subjects over a considerable span of years. Is it then justifiable to consider the character structure of such a group as abnormal because it differs from that of a group of hearing peers?

Weak though the structure may be for coping with the demands of the hearing world, we are still not justified in considering it "neurotic". If an appellation were to be used, the term "underdeveloped" would be most appropriate, more to the point than "immaturity"; for "emotional immaturity" has come to be associated with psychotherapeutic needs, whereas "emotional under-development" implies that the basic needs lie rather in the area of education. Conceptual and emotional under-development are the normally expected concomitants of the "deaf" educational situation, and cannot be considered a deviation therefrom. Before we can ascertain the nature of the deviations in "deaf" personality —of what is neurotic or abnormal "deaf" behavior—we must first establish what the normal is for each of the various subgroups of the deaf at the various age levels.

Thus, the Rorschach study indicates that for the deaf, conceptual and emotional under-development are the normal elements of a particular type of character structure. In spite of its weaknesses, such a structure may yet have served a positive function as protector of the developing ego against being completely overwhelmed by the tide of stresses, strains and frustrations arising from deafness. If this structure differs from that of the normal hearing, it is mainly for the reason that the deaf group must take a far more devious, circuitous, and often haphazard route to satisfy its needs. Terms signifying abnormality are more appropriately applied to this situation rather than to the type of personality structure that has enabled a group to cope successfully with the handicaps of deafness. It is, nevertheless, recognized that this structure is

potentially weak equipment for meeting future life-demands independently and satisfactorily. How to strengthen and broaden it is a problem for further investigation.

ASPECTS OF PSYCHOPATHOLOGY

To clear the way, some common misconceptions will first be considered. Among the commonest is that normal deaf individuals have a characteristic paranoid quality to their thinking and feeling; that they are abnormally suspicious of being watched, criticized, laughed at, and talked about by others without any basis in reality. Actually, however, the deaf have more than an adequate basis for these "suspicions". How many times has the reader stared in fascination at a group engaged in animated "sign" conversation; or turned a quizzical gaze in the direction of a deaf voice; or made some comment or other under the impression that because the deaf cannot hear, they are equally blind to remarks made about them. Sometimes the situations become quite intolerable, as when a deaf person on-the-job is made the butt of practical jokes by his hearing co-workers; or else is regarded in the light of the misconceptions of the centuries.

The normal deaf, as a rule, are singularly forbearing with hearing peers and quite willing to give them another chance. Some even develop a sense of humor about their behavior. But, on the other hand, there are many who do remain sensitive to and irritated with the hearing world. Such sensitivity, however, becomes psychopathologically suspect when it takes a bizarre turn, when it expands from the kernel of justification into full-blown, unreasonable and unwarranted suspicion, and/or when it is accompanied by other symptoms of disturbance. This condition does not prevail among the normal deaf-at-large. On the contrary, when in the company of their own deaf society, which, incidentally, the vast majority prefer, whatever sensitivity and self-consciousness they may have presented to the hearing world falls away and they emerge as an animated, gay, and quite "gossipy" group with tremendous zest for conversation and socialization.

Other misconceptions concern psychodiagnostic evaluations of various behavioral and emotional problems of deaf patients by specialists who do not know the deaf. Thus, in cases of severe disturbance, it is not uncommon for the family to be told: "There is nothing wrong; that's the way the deaf behave." Or, on the other hand, a mild disturbance may be mistakenly considered profound, with drastic therapeutic measures recommended.

Actually, the signs and symptoms of emotional disturbance in the deaf are no different from those in the hearing. The writer has frequently encountered the following in emotionally disturbed

deaf adults: anxiety; irritability; depression; withdrawal; phobias; obsessive rumination; compulsive acts and rituals; ideas of reference; delusions; and hallucinations. Excessive irritability to noise has been quite commonly observed as have the obsessive-compulsive phenomena. The range of disturbances has extended from anxiety states through psychoses—as in the hearing.

Such are the symptoms. But what of the treatment? In this regard, the greatest difficulties are experienced, particularly when the disturbance is subacute. In the cases of the acutely disordered, electro-shock therapy has been used with success *(31)*. But in the cases of those who are not sufficiently disturbed to warrant such drastic measures, the problem of obtaining appropriate psychotherapy is indeed frustrating.

Orthodox psychoanalytic treatment is quite beyond the scope of the average deaf individual. The barriers are: difficulties of communication between patient and physician; and the deaf patient's language limitations, his inability to grasp the abstract concepts involved, comprehend their significance, and profit from this knowledge. It is only the very highly endowed deaf patient who can be considered as a possible subject for depth therapy, providing he is highly endowed as well in communication and language skills. And even in such cases, the outcome so far as major personality reintegration is concerned is problematic. Here, too, factors of awkward communication contacts between physician and patient may prolong the treatment to such an extent as to render it almost impossible from the point of both time and finances.

However, according to one psychiatrist who has had therapeutic experiences with the deaf *(32)*, less probing methods of psychotherapy may be applied with more success, especially for the removal of peripheral symptoms. Such methods are: supportive; directive and suggestive; ventilation; clarification; and the modification of irritating external factors, especially in the home and work environment. In certain treatment situations, considerable, planning is necessary to provide acceptable outlets for aggressiveness and acceptable compensations for frustrated basic needs as well as for neurotic needs. Wherever possible, interpretations are attempted and defensive positions and transference phenomena are dealt with, but always on the language and ideational level which the patient can grasp. However, the uncovering technique must be used with great discretion, lest too many defenses be ripped away. The general aim of psychotherapeutic treatment for the average deaf patient is to strengthen the ego through reinforcing the positive elements of personality; to make symptoms

less burdensome; and, in general, to make life a fuller, happier experience.

It has been the writer's experience too that education, explanation, direction, and modification of the irritating factors in the environment comprise the most generally effective techniques in psychotherapeutic work with the not-too-profoundly-disturbed average deaf patient.

REFERENCES

1. Ramsdell, D. A.: *"The Psychology of the Hard-of-Hearing and the Deafened Adult,"* chapter 16 in Hearing and Deafness, by Hallowell Davis, New York: Murray Hill Books, Inc., 1947.
1. Best, H.: *Deafness and the Deaf in the United States,* New York: The Macmillan Company, 1943, pp. 149–151; pp. 13, 14, 16; p. 14; pp. 550–551; p. 203.
2. White House Conference on Child Health and Protection, Section III, *The Deaf and the Hard of Hearing,* p. 277.
3. Berry, G.: *"Deafness in the United States,"* in The Volta Review, Vol. 40, No. 2 (February, 1938), p. 69.
4. National Institute of Health, National Health Survey, Hearing Studies, Series No. 1, p. 5.
5. Levine, Edna Simon: *"Psychoeducational Study of Children Born Deaf Following Maternal Rubella in Pregnancy,"* in American Journal of Diseases of Children, American Medical Association, Vol. 81, May, 1951, pp. 627–635.
6. Brunschwig, L.: *A Study of Some Personality Aspects of Deaf Children.* Contributions to Education, No. 687, New York: Teachers College, Columbia University, 1936.
7. Ballard, Melville: *"Reflections of a Deaf Mute Before Education,"* American Annals of the Deaf, 26:32 (1881).
8. Pintner, R. and Paterson, D. G.: *"The Binet Scale and the Deaf Child,"* Journal of Educational Psychology, 6:201–210 (1915).
9. Day, H. E., Fusfeld, I. S. and Pintner, R.: *A Survey of American Schools for the Deaf,* Washington, D. C.: National Research Council, 1928.
10. Reamer, J. C.: *"Mental and Educational Measurements of the Deaf,"* Psychological Monographs, 29: No. 132, 1921.
11. Lyon, V. W. et al.: *"Report of the 1931 Survey of the Illinois School for the Deaf,"* American Annals of the Deaf, 78: 157–175, 1933.
12. Peterson, E. G. and Williams, J. M.: *"Intelligence of Deaf Children as Measured by Drawings,"* American Annals of the Deaf, 75: 273–290, 1930.
13. Zeckel, A. and Van der Kolk, J. J.: *"A Comparative Intelligence Test of Groups of Children Born Deaf and of Good Hearing by Means of the Porteus Test,"* American Annals of the Deaf, 84: 114–123, 1939.
14. Goodenough, F. and Shirley, S.: *"A Survey of Intelligence of Deaf Children in the Minnesota Schools,"* American Annals of the Deaf, 77: 238–247 (1932).
15. Drever J. and Collins, M.: *Performance Tests of Intelligence,* Edinburgh, Tweedale Court: Oliver and Boyd, 1928.
16. Springer, N. N.: *"A comparative Study of the Intelligence of a Group of Deaf and Hearing Children,"* American Annals of the Deaf, 83: 138–152, 1938.

17. Burchard, E. and Myklebust, H. R.: *"A Comparison of Congenital and Adventitious Deafness With Respect to Its Effects on Intelligence, Personality and Social Maturity,"* American Annals of the Deaf, 87: 140–155; 241–251; 342–360, 1942.
18. Lane, H. S. and Schneider, J. L.: *"A Performance Test for School-Age Deaf Children."* American Annals of the Deaf, 86: 441–447, 1941.
19. Levine, Edna Simon: *"An Investigation Into the Personality of Normal Deaf Adolescent Girls,"* unpublished dissertation, Washington, D. C.: Library of Congress, 1948.
20. Wechsler, D.: *The Measurement of Adult Intelligence,* (Second Edition), Baltimore: The Williams and Wilkins Company, 1941.
21. Pintner, R., Eisenson, J. and Stanton, M.: *The Psychology of the Physically Handicapped,* New York: F. S. Crofts, 1941.
22. Lyon, V. W.: *"Personality Tests with the Deaf,"* American Annals of the Deaf, 79: 1–4, 1934.
23. Pintner, R., Fusfeld, I. S. and Brunschwig, L.: *"Personality Tests of Deaf Adults,"* Journal of Genetic Psychology, 51: 305–427, 1937.
24. Springer, N. N., *"A Comparative Study of Psychoneurotic Responses of Deaf and Hearing Subjects,"* Journal of Educational Psychology, 29: 459–466, 1938.
25. Springer, N. N. and Roslow, S.: *"A Further Study of the Psychoneurotic Responses of Deaf and Hearing Children,"* Journal of Educational Psychology, 29: 590–596, 1938.
26. Kirk, S.: *"Behavior Problem Tendencies in Deaf and Hard of Hearing Children,"* American Annals of the Deaf, 83: 131–137, 1938.
27. Springer, N. N.: *"A Comparative Study of the Behavior of Deaf and Hearing Children of New York City,"* American Annals of the Deaf, 83: 255–273, 1938.
28. Bradway, K. P.: *"The Social Competence of Deaf Children,"* American Annals of the Deaf, 82: 122–140, 1937.
29. Streng, A. and Kirk, S. A.: *"The Social Competence of Deaf and Hard of Hearing Children in a Public Day School,"* American Annals of the Deaf, 83: 244–254, 1938.
30. Heider, F. and Heider, G. M.: *"Studies in the Psychology of the Deaf, No. 2,"* Psychological Monographs, Vol. 53, No. 5, The American Psychological Association, Inc., 1941.
31. Personal Communication: John H. Scharf, M.D., Consultant Neuropsychiatrist Lexington School for the Deaf, New York City.
32. Personal Communication: Matthew Levine, M.D.

Start 43

THE HARD-OF-HEARING

Helen S. Lane

DEFINITION OF THE TERM

The term "hard-of-hearing" requires definition before any discussion of psychological problems can begin. In 1937 the Committee on Nomenclature of the Conference of Executives of American Schools for the Deaf defined the hard-of-hearing as those in whom the sense of hearing, although defective, is functional with or without a hearing aid. This classification is a broad one and requires more specific description in terms of such factors as the age of the individual; age of onset of hearing loss; and amount of residual hearing especially for frequencies in the speech area.

Popular use of the term seems to vary with age. When parents write to schools of the deaf for educational advise, they describe the child as "hard-of-hearing" and continue to say that the child does not talk and responds to only very loud environmental sounds of low frequency. To them the term "hard-of-hearing" is easier to accept than the term "deaf."

When an adult has a progressive hearing loss—even with complete command of language and successful use of a hearing aid—his friends describe him as deaf. When persons of normal hearing occasionally fail to understand, the usual quip is—"What's the matter with you—are you deaf?"

This discussion concerns both children and adults who have acquired speech and language in the normal way—through hearing—even if the speech is defective due to the hearing loss. Serious handicap begins when no hearing aid enables the individual to hear satisfactorily in the average social situation.

The consultants on Audiometers and Hearing Aids of the Council on Physical Medicine of the American Medical Association have prepared a chart to assist in calculating from the audiogram the "percentage loss of useful hearing for speech". According to Davis *(1)* a fully satisfactory scale for measuring anything so intangible and complex as "percentage loss of capacity to hear speech" or "social adequacy" will probably never be attained. The rules will always be arbitrary and will never fit all cases equally well. The American Medical Association scale makes the worse ear only one seventh as important as the better ear and is based on the assumption that no hearing aid is worn.

It has been estimated by Silverman *(2)* that one and a half to two million school children in the United States have defective hearing. This takes on serious significance when we consider that this means five percent of the future adult citizens of the nation will have hearing losses sufficient to warrant some form of treatment.

An estimate of the adult hard-of-hearing is difficult because so many cases fail to seek help. One estimate places the figure at five million and another at fifteen million. At any rate the number of hard-of-hearing who need help is significantly large enough to warrant attention to the problem.

TESTS OF HEARING

Recognition that a child is hard-of-hearing may come through observations of parents, teachers or friends who note the child's inattention or failure to respond to questions or commands. Referral may then be made first to the pediatrician and then to the otologist and/or the hearing clinic.

A hearing loss may be detected in a screening test given to children as a routine in the school health program. For rapid and approximate testing some communities may use the crude techniques of conversational and whispered voice, the coin click and the watch tick. The most widely used test is the group or phonograph audiometer. As many as forty children can be tested at once through forty calibrated headphones. The words (two-digit numbers) are recorded on a disk at successively lower intensity. In order for children to be able to be tested using this method they must know how to write two digit numbers on record sheets. Threshold is the loudness at which the child last heard two of the four two-digit numbers correctly.

Another screening technique is the use of a "sweep-frequency" method. In this test the intensity dial of the audiometer is set at a level within the range of normal ears (say ten decibels lower than normal threshold) and the child is rapidly exposed to each frequency in octave steps.

If a child shows a twelve decibel loss or more on the phonograph test or misses two tones of the sweep frequency test, he should be referred to an otologist or a hearing clinic for careful individual diagnosis. Parents must be intelligently informed of the result of the screening tests and the need for further testing essential to confirm screening test results and suggest treatment.

Individual hearing tests may be pure tone or speech tests. In audiometric testing the individual hears pure tones usually at octave intervals. Intensity can be increased in five decibel steps. The number of decibels that intensity must be increased above the "normal" threshold in order to be heard is a measure of hearing

loss. The audiogram is a graphic summary of measurements of hearing loss.

Thresholds for speech or hearing loss for speech may be measured with either words or sentences. Selection of words in the construction of speech tests has not been easy. One such list is made up of spondees (two syllable words with equal stress on each syllable—such as football, railroad) and another list previously mentioned consists of two-digit numbers. Many lists of sentences have also been compiled. These words and sentences have been recorded on phonograph disks at successively weaker levels of intensity.

The audiometer and speech tests mentioned are all designed to measure losses in acuity of hearing—and assume that if sounds are made loud enough, the hard-of-hearing person will understand them.

The most important thing we wish to know about a person's hearing is whether or not he can follow ordinary conservation. Is his hearing socially adequate? To test an individual's ability to discriminate speech, lists of monosyllabic words that are phonetically balanced are presented on records. If these words are read at several intensities the scores can be plotted in a smooth S shaped curve that is steepest at or a little below its middle and levels off gradually to a plateau *(3)*. If the words are read at the acuity threshold, none can be understood; at about thirty-three decibels above the reference level (0.0002 dynes per cm^2) the listener discriminates fifty percent of the words correctly, and the plateau of the articulation curve is at one hundred percent of words correctly understood under good listening conditions. A man with a severe high tone deafness will always fail to hear certain sounds and will never make a perfect articulation score. This type of hard-of-hearing person is the one who says "I can hear you but I can't understand what you say." He resents people who shout at him and accuses everyone of "not speaking plain." No matter how loud the speaker talks or how much amplification is introduced—with an inferior communication system some words are never correctly understood.

The border line for social adequacy seems to be a hearing loss for speech of thirty-five decibels in the better ear. With such a loss a man can "get by" about half the time.

TESTS OF INTELLIGENCE AND SCHOOL ACHIEVEMENT

Studies of the intelligence of the hard-of-hearing have been applied to school children—but test results of children should be an index of the influence of a hearing loss on the mental ability of the adult.

Waldman, Wade and Aretz *(4)* (1930) in a comprehensive study of the hard-of-hearing school child reported results of scores on the National Intelligence Test. For the good hearers the range of Intelligence Quotient was from 68 to 140 with a mean of 104.5 and for the poor hearers the range was 68 to 132 wtih a mean of 92.4. This is a verbal group test and scores are influenced by attention to directions and the acquisition of incidental information.

Madden *(5)* (1931) used various tests of intelligence on hard-of-hearing children. He found low negative correlations between Intelligence Quotient and hearing loss. His results may be summarized as follows:

Test	Number		Mean I. Q.	
	Hard-of-Hearing	Normal Hearing	Hard-of-Hearing	Normal Hearing
Binet	46	46	77.04	83.46
Rapid Survey	46	537	77.09	84.85
Otis Group	13	170	93.38	101.55

In 1939 Pintner and Lev *(6)* compared the results of hard-of-hearing and normal hearing children in grades five, six, seven, eight, on a Verbal Test of Intelligence (Pintner Intelligence Test) and a Non Language Intelligence Test. The following results were published:

	Grade	Verbal Test		Non-Language Test	
		Number	Mean I.Q.	Number	Mean I.Q.
Hard-of-Hearing	5-6	115	95.48	115	100.57
	7-8	175	94.95	175	99.17
Total		290	95.16	290	99.73
Normal Hearing	5-6	120	101.6	120	99.7
	7-8	194	102.6	194	102.2

Scores for the "extremely" hard-of-hearing (loss of fifteen decibels or more in the speech range) showed the mean Intelligence Quotients to be slightly lower—Verbal Tests 92.36 and Non-Language Test 99.26.

As a result of the study, Pintner and Lev concluded that there is no real difference in basic general intelligence between the hard-of-hearing and the normal hearing child in elementary school. They caution clinicians not to use a verbal intelligence test for the hard-of-hearing.

Waldman, Wade and Aretz *(7)* called attention to the educational retardation of hard-of-hearing children. They estimated an eleven percent loss in achievement and found that for every five grade repetitions of good hearers there were nine grade repetitions of poor hearers. Children in the fourth and fifth grades were affected by hearing loss more than children in the higher grades. This is probably due to the preponderance of oral instruction in educational techniques in the lower grades and the greater dependence upon textbooks as children grow older.

A study reported by Hofsommer *(8)*, a public school physician in a suburb of St. Louis, gave evidence of a rise in educational achievement quotients of a group of hard-of-hearing children receiving lip reading instruction as compared to another group of hard-of-hearing children who did not receive such instruction. Evidence of this change led the school district to employ a teacher of lip reading and speech.

Caplin *(9)* (1937) also stressed the influence of lip reading on school achievement. Among 4,566 hard-of-hearing children who had been taking lip reading in the public schools for an average of a year, he found 41.9 percent who showed retardation in school before instruction and only 5.6 percent after lip reading instruction. Twenty-eight percent of a control group of normal hearing children from the same New York City schools and classes showed retardation. As the hearing loss increases, the difficulty of keeping up in school becomes greater.

Pintner *(10)* (1941) called attention to the educational retardation of the hard-of-hearing child in grades five and six on the Pintner Educational Achievement Test and reported the following results:

	Number	*Mean Score*
Normal Hearing	536	35.4
Hard-of-Hearing	402	34.4
Extremely Hard-of-Hearing	78	33.1

The loss in school achievement is extremely important in the attitude of the hard-of-hearing child toward school, toward his hearing companions and toward the continuation of education beyond the legal age requirement. The future of the hard-of-hearing adult who had a hearing loss as a child is affected by the level and quality of his education.

INFLUENCE OF A HEARING LOSS ON PERSONALITY

Studies of the effect of a hearing loss on personality have been made on children and adults. Are there differences due to hearing loss that differentiate the hard-of-hearing as a group? Some persons generalize about behavior traits of the hard-of-hearing from one individual. "I hired a deaf man once . . . " This may lead to

a lengthy description of unacceptable behavior that is attributed to all hard-of-hearing. The hard-of-hearing as the normal hearing show a vast range of individual differences in personality traits.

Comparisons of the hard-of-hearing and normal hearing child in personality will be discussed first.

Madden *(11)* developed a rating scale to be used by teachers and applied it to a hard-of-hearing group and a control hearing group matched for intelligence, age, sex and race. He found no difference in attentiveness, obedience and social attitude. The hard-of-hearing were rated as lower in leadership, as less aggressive and as more shy. The judgments of the teachers reported in this study do not agree with the usual reports of inattention and daydreaming attributed to the hard-of-hearing.

Habbe *(12)* made an intensive study of 48 adolescent hard-of-hearing boys, each matched with a hearing boy in the same grade and school. The hard-of-hearing boys all had more than a fifteen decibel loss in both ears. The measures of personality included the Symonds Adjustment Questionnaire, the Aspects of Personality Test, The Haggerty-Olson-Wickman Behavior Rating Scale and an autobiographical outline constructed by Habbe. On the basis of a composite score, the ten best adjusted and the ten poorest adjusted were interviewed by Habbe. The two groups of boys were very much alike with the hard-of-hearing group slightly more submissive and introverted. Habbe concluded that "if a boy's total adjustment to life is good, then it is possible for him to resolve minor difficulties".

Kirk *(13)* (1938) applied the Haggerty-Olson-Wickman Schedule to 112 deaf and hard-of-hearing children. There is no definition of amount of hearing loss, but Kirk concluded that there was no difference in the deaf and hard-of-hearing groups. Both groups have greater behavior problem tendencies and more emotional problems.

In 1940 Pintner *(14)* used the Pupil Portraits Test to compare 1,397 hard-of-hearing with 1,604 normal hearing children in grades five to eight. On this test, the higher the score the better the adjustment. The mean scores for the hard-of-hearing are slightly lower—the difference being statistically reliable for the boys but not for the girls. The extremely hard-of-hearing were less well adjusted. This study shows the hard-of-hearing child to be almost as successful in his adjustments as his hearing classmates.

In 1942 Pintner *(15)* applied the Aspects of Personality Test to 1,171 hard-of-hearing children and 1,208 hearing controls. This test measures three traits; namely, ascendance-submission, extroversion-introversion and emotional stability. There was no

difference in ascendance-submission except perhaps a slight tendency for those with extreme loss (thirty decibels or more) to be more aggressive. There was no difference in extroversion-introversion scores. In the test of emotional stability there is a small but real difference between the hard-of-hearing and the hearing. Probably the hearing loss makes him less stable emotionally in daily situations he must face.

Comments on the personality of the adult hard-of-hearing have been made by the hard-of-hearing themselves, by psychologists as a result of personality tests and by those in professional fields dealing with problems of deafness. It is difficult to evaluate the conclusions but they all seem to cite similar personality traits.

In 1933 Berry *(16)* listed changes in behavior due to progressive deafness. The child is considered inattentive and stupid by teachers and parents. His playmates think him queer and self-centered. The hard-of-hearing child tries to cover up his handicap and may feel inferior or compensate for attention. The adult hard-of-hearing show resistance and rebellion. The handicap is greater for women than men, as men are usually accepted on business worth. A hearing loss in the sixties is a trial for the non-creative mind and these persons tend to drop out of activities. Berry cites as assets of a hearing loss that it decreases distractions and increases concentration; that it fosters constructive thought and that it increases interpretive capacity of the other senses.

The studies of Welles *(17)* (1932) and Pintner *(18)* (1933) were based on the results of the Bernreuter Personality Inventory applied to urban and rural hard-of-hearing adults who were members of Leagues for the Hard-of-Hearing. Hearing controls were selected by the hard-of-hearing. Results of the Bernreuter test showed the hard-of-hearing to be less stable emotionally, more introverted, less dominant and equal in self-sufficiency. Welles found a special group of thirty-one women chosen because they had surmounted their handicap so well, equal in all tests to their controls. (There were too few men in the studies to reach statistical conclusions concerning them.)

Welles and Pintner found no relation between neurotic tendency and age of loss of hearing, years of deafness and hours of lip reading instruction. Those untrained in lip reading had higher neurotic scores. Those suffering from tinnitus showed more emotional instability. The isolated group with less opportunity for reeducation and readjustment had more undesirable traits. Pintner concluded that if so many readjust without help, wouldn't a technique of reeducation bring adequate readjustment more speedily to a larger number?

An interpretation of normal hearing at three levels by Ramsdell

212229°—52——11

(19) gives one of the most reasonable explanations of the feeling of depression and of the discouragement of the hard-of-hearing and deafened adult. The levels as described by Ramsdell are:

1. The symbolic level in which we use hearing to comprehend language. Words are symbols for objects and activities around us.
2. The signal or warning level to which we make constant adjustments in our daily living. We stop our car—not because someone says "policeman" but because we hear his shrill whistle.
3. The primitive level made up of sounds that serve as an auditory background of all daily living. These incidental noises maintain our feeling of being part of a living world.

These background sounds are constantly changing because our environment is in a state of constant activity. We are ready to react to these sounds, as the need arises. "The feeling state established by the primitive function of hearing is therefore characterized by this readiness to react as well as by the comfortable sense of being part of a living, active world" according to Ramsdell. He believes the basic emotional upset of the deafened is caused by the loss of hearing at the primitive level.

When the deaf person realizes the reason for his characteristic depression, it helps him cope with it without bewilderment or self-blame.

At the warning level, a lack of learning leaves us uninformed of events outside the visual field. Hearing tells us something about the distance and direction of the source of sound. Loss at this level results in a feeling of insecurity but practical readjustments can be made. At this level hearing contributes also to our aesthetic experiences. There are individual differences in the degree of this need. Aesthetic experiences include everything from hearing the sounds of nature to hearing a symphony.

At the symbolic level Ramsdell includes language: (1) to communicate experiences; (2) to clarify and organize our thoughts; and (3) in a growing child to formalize and bind social prohibitions and permissions. For the adult deafened, the latter two functions of hearing at the symbolic level are not affected.

Marie Hays Heiner *(20)* attributes the sensitivity of the hard-of-hearing to vanity. Deafness threatens this vanity because people confuse hearing, a physical function, with understanding, a mental process. Perhaps this dates back to the time when the words deaf and dumb were always combined. In self defense, Mrs. Heiner claims, the hard-of-hearing pretend to hear.

Several persons refer to the suspicions of the hard-of-hearing. The loss of hearing seems to accentuate the tendency of individuals

to feel that an interrupted conversation of a group was about them or to feel that remarks, not clearly heard, were critical of them. Ramsdell *(21)* says that "Deafness seems to be a powerful stimulus to any latent paranoid trends in the personality." If a person feels secure emotionally deafness will not produce suspicions of others.

Another characteristic of the hard-of-hearing is the tendency to dominate the conversation. While talking there is no strain of listening and no embarrassment of errors in understanding, hence the deafened adult tells long detailed stories of every day events in past or present experience.

REHABILITATION PROGRAM

What kind of a program can be presented to the hard-of-hearing to aid in adjustment to our hearing world. This is a problem that will call for the skill and cooperation of otologists, audiologists, psychologists, educators and friends.

The first hope of every hard-of-hearing adult and every parent of a hard-of-hearing child is for a cure. They feel there must be some miracle of modern medicine that will help.

An otologic examination should precede or be included in the services of a hearing clinic. The examination and advice of a competent otologist should be sought to reassure the hard-of-hearing person and then that advice should be followed. Many persons make pilgrimages to several hearing clinics always hoping for a "cure."

The commonest cause of a hearing loss from the external canal is wax which may harden in the canal and become impacted. A doctor can remove the impacted wax without injury to the canal.

Adenoids, tonsils and sinuses are indirect causes of hearing loss as they may prevent ventilation of the middle ear and favor infection. Enlarged tonsils and adenoids should be removed surgically.

Otosclerosis has been estimated as the cause of approximately one million cases of hearing loss in the United States. It is a hereditary bone disease affecting the bony capsule that surrounds the inner ear causing a fixation of the stapes. The fixation occurs only gradually over a period of years. The hearing loss is usually first noticed in adolescence or in the early twenties. A fenestration operation may restore these patients to social adequacy. An "ideal" case according to Dr. Theodore Walsh *(22)* is one in which there is no evidence of nerve deafness and only a conductive loss to be overcome. Dr. Walsh estimates seventy-five percent of ideal patients will achieve social adequacy. Many hard-of-hearing patients have read of the fenestration operation and interpret their reading to mean that a surgical cure for deafness has been found.

Counseling with these patients is frequently essential in order to explain that the operation helps only patients whose hearing loss is due to otosclerosis. They should be sent to an otologist, trained in this surgical technique, if there is a question of eligibility for the operation.

The modern hearing aid is perhaps the greatest boon to the hard-of-hearing—and yet one that is resisted longest by sensitive adults. Advertising has been misleading as no hearing aid can ever compensate completely for a hearing loss. A hearing aid should be as small, light, durable and inexpensive as possible, and it should amplify sound without unnecessary impairment of quality.

The hard-of-hearing child takes great pride in his hearing aid—and if he is enrolled in a school for the deaf—it becomes a label of distinction. For the children the aid seems responsible for more rapid progress—as is really true—but unfortunately a hearing aid alone cannot do the job, there must be sufficient residual hearing to amplify.

In adults vanity plays an important part. Hearing aid manufacturers frequently advertise the "invisibility" of the aid—or the fact that it resembles costume jewelry more than the quality of the amplified sound. The hard-of-hearing person who does not wear an aid and could wear one beneficially shows a lack of consideration for his family and friends.

The audiogram may be used as a guide in determining the need for an aid. If the hearing loss in the better ear averages more than thirty decibels in the speech range (300–3000 cycles per second), the need for a hearing aid is indicated, according to Silverman and Taylor *(23)*.

Some hard-of-hearing persons cannot benefit greatly from an aid. For example, the man who has a slight loss in the low frequencies and a severe loss from one thousand cycles per second throughout the high frequencies would have difficulty in discriminating the consonants of speech. A program of intensive auditory training would be essential to make an aid of help to him.

Presbycusis is the progressive hearing loss for high tones that goes along with old age. It is a loss similar to that of the man just described. The aged do not have the patience or the concentration to benefit from auditory training. Evaluation for a hearing aid must be made on an individual basis. If the elderly person does not accept the aid voluntarily, he should not be forced to wear it.

A patient may be guided in the selection of a hearing aid by a hearing clinic where many aids are available for trial and testing under controlled conditions. Otologists and chapters of the American Hearing Society will give guidance but may not be equipped for comparative tests. The hearing aid salesman will

help in selecting the most suitable model of the aid he is selling. The purchaser is cautioned in the latter case to determine whether the aid has been "accepted" by the Council on Physical Medicine of the American Medical Association.

The educational portion of the recommended program for the hard-of-hearing consists in instruction in Lip Reading or Speech Reading and Auditory Training.

For children there are teachers of lip reading in almost all school systems of the large cities. This teacher should be equipped to teach speech in order to correct speech errors due to the hearing loss. A hard-of-hearing child may suffer more teasing because of his speech defect than because of his hearing loss. When the school system does not provide the teacher, there may be a lip reading clinic the child could attend for instruction.

Adults become discouraged quite easily and frequently a course of lessons or group instruction is recommended. Only one-third of speech sounds are visible on the lips and the lip reader must get context clues. The lip reading student should be told that he will encounter poor and careless speakers. It may be wise to tell him there are individual differences in learning and there is no correlation between intelligence and lip reading skill.

There are many methods and systems of teaching lip reading. In the author's opinion the teacher is more important than the method used. Marie Hays Heiner describes her first lip reading teacher as one who was not an inspiration; veterans expressed a preference for a pretty girl; and adults in the clinic at Central Institute enjoy the instruction and enthusiasm of the student teachers. The teacher of lip reading should have normal hearing in order to help the hard-of-hearing in speech conservation.

Many adults look upon lip reading as a last resort—when the hearing aid is no longer a help. They should be urged to supplement lip reading with a hearing aid and vice-versa.

In an auditory training program the hard-of-hearing must learn to take full advantage of the auditory clues still remaining. Carhart *(24)* claims that an attitude of critical listening must be established. The person wearing a hearing aid must learn to discriminate sounds as he hears them with his aid.

There are several organizations interested in the problems of the hard-of-hearing. At the Volta Bureau in Washington, D. C., is the largest collection of books and periodicals on problems of deafness in America. Letters sent by the Volta Bureau staff to parents of deaf children, to the hard-of-hearing and to teachers have been of great service. The Volta Review, a periodical now published in ten issues per year, offers articles of guidance and inspiration to the hard-of-hearing. The American Hearing Society

has more than one hundred local chapters ready to serve the hard-of-hearing as information centers, social agencies, employment bureaus and clubs for social activities. In addition lip reading classes and hearing aid guidance are services available in many of the chapters. The Department of Lip Reading of the National Education Association has stressed the conservation of hearing programs in the public schools.

Vocational counselling may be a service essential to the hard-of-hearing child ready to prepare for his life's work or to the adult who must change employment because of his hearing loss. Almost any job that does not require communication skills is open to the hard-of-hearing. Again stress must be placed upon personality which seems to be the deciding factor in keeping or losing a job.

What help can be given to the hard-of-hearing in the psychological adjustment? Marie Mays Heiner *(25)*, who speaks from experience, says "Face the facts * * * all the facts about yourself and your environment as related to your deafness. You are not alone in your dilemma. Five to ten percent of the population of the United States are hard-of-hearing." Her autobiographical account of her victory over deafness and similar accounts by others can be a help to the hard-of-hearing adult. There is even a children's book with appropriate illustrations called "Tim and His Hearing Aid," that should be of help to the hard-of-hearing child.

One of the author's hard-of-hearing friends found her greatest help in reading Ramsdell's description of the levels of hearing and was guided into an objective attitude toward her hearing loss, the purchase of a hearing aid and a return to social activities.

Berry *(26)* published the Ten Commandments for the Hard-of-Hearing in Biblical style and Ramsdell *(27)* has listed some practical suggestions in modern English.

Ramsdell also emphasizes the necessity of admitting the hearing loss frankly and realistically. Society has accepted glasses and will accept the wearing of a hearing aid.

When seeking information, some advance knowledge of the vocabulary and possible responses will help in the situation. Advice to the hard-of-hearing could be to adopt the Boy Scout slogan, "Be Prepared."

In a conversation with friends instruct the hard-of-hearing to admit failure to understand and not bluff.

The hard-of-hearing should be encouraged to develop hobbies and meet others with similar interests. Creative activity or an avocation helps in the adjustment. Interest in other people must be constantly stressed.

Social opportunities for the hard-of-hearing must be provided. Women, more than men, feel isolated as a result of a hearing loss.

For example, they may be excluded from bridge club because intimate chatter at the bridge table loses it savour if it must be shouted. Screaming the bid does not add to the pleasure of the game.

Chapters of the American Hearing Society fill this need for group social activity and the heard-of-hearing woman again finds pleasure in a bridge game with companions who have a similar handicap. With lip reading skill and a hearing aid she regains self confidence and accepts invitations from hearing friends.

Adult lip reading clinics have as one of the assets—not only instruction in lip reading and speech conservation—but the social contacts of the group. At the Central Institute Clinic the coffee "hour" which is a recess between lessons, the Christmas party and the annual picnic are highlights of the program, because of the social opportunities available—and may motivate the adults to continue instruction.

SUMMARY AND RECOMMENDATIONS

This discussion of the hard-of-hearing has attempted to cover definition of the handicap, measurement of the hearing loss, and all attempts to rehabilitate through surgery, hearing aids, instruction and social adjustment. Mental and educational status of the hard-of-hearing child were included as they contribute to his future adjustment as an adult.

In summary the hard-of-hearing may be defined as those persons in whom the sense of hearing, although defective, is functional with or without a hearing aid. The amount and kind of loss can be determined by pure tone and speech tests. Studies of the intelligence of hard-of-hearing school children show normalcy providing non-language tests are used. The hard-of-hearing child is slightly retarded educationally and repeats more grades than his hearing friends. This educational retardation can be reduced or eliminated by instruction in lip reading.

Personality studies of children show them to be less attentive, more apt to be behavior problems and less stable emotionally. Differences from the hearing were not as great as anticipated but there was a trend toward greater maladjustment with more severe losses in hearing.

Hard-of-hearing adults are believed to be less stable emotionally, more introverted and less dominant. They frequently feel depressed, discouraged and may be suspicious of others. Ramsdell feels the basic emotional upset is due to the loss of hearing at the primitive level—made up of sounds that maintain our feeling of being a part of a living world.

A suggested program of rehabilitation and psychological adjustment includes:

1. An examination by an otologist to determine if possible the cause of deafness. Recommendation of medical treatment or surgery should be made to those who would benefit.
2. A series of hearing tests to determine whether a hearing aid would be beneficial and to give guidance in the selection of an aid if one is recommended.
3. Educational training in:
    a. Lip reading and speech conversation.
    b. Auditory training.
4. Assistance from organizations specializing in hearing problems.
5. Vocational counseling.
6. Psychological adjustment through:
    a. Facing the facts of deafness and admitting hearing loss.
    b. Understanding the cause of the emotional upset (loss of hearing at primitive level).
    c. Developing hobbies and social interests.
    d. Becoming interested in others.
    e. Creating opportunity for social activities.

Studies all seem to indicate that the hard-of-hearing need not deviate from the normal hearing with the opportunities for adjustment now available.

REFERENCES

1. Davis, H.: Tests of Hearing, Chapter 6, p. 125–161, *Hearing and Deafness.* Murray Hill Books, New York 1947.
2. Silverman, S. R.: Hard-of-Hearing Children, Chapter 14, p. 352-367, *Hearing and Deafness.* Murray Hill Books, New York 1947.
3. Davis, H.: Op. Cit.
4. Walman, Wade and Aretz: *Hearing and the School Child.* Volta Bureau, Washington, D. C. 1930.
5. Madden, R.: *The School Status of the Hard-of-Hearing Child.* Teachers College Contributions to Education, No. 499. Columbia University, New York, 1931.
6. Pintner, R. and Lev, J.: *The Intelligence of the Hard-of-Hearing School Child.* J. Genet. Psych. 1939, *55*, 31–48.
7. Waldman, Wade and Aretz: Op. Cit.
8. Hofsommer, A. J.: *Lip Reading and the Intelligence Quotient of the Hard-of-Hearing Child.* 1936, 107, 648–650.
9. Caplin, D.: *A Special Report of Retardation of School Children with Impaired Hearing in the New York City Schools.* American Annals of the Deaf, 1937, 82, 234–43.
10. Pintner, Eisenson and Stanton: The Hard-of-Hearing. Chapter 6, p. 188–205. *Psychology of the Physically Handicapped.* Crofts and Company, New York 1941.
11. Madden R.: Op. Cit.
12. Habbe, S.: *Personality Adjustments of Adolescent Boys with Impaired Hearing.* Teachers' College Contributions to Education, No. 697. Columbia University, New York, 1936.

13. Kirk, S.: *Behavior Problem Tendencies in Deaf and Hard-of-Hearing Children.* American Annals of the Deaf, 1938, 83, 131–138.
14. Pintner, R.: *An Adjustment Test with Normal and Hard-of-Hearing Children.* J. Genet. Psych. 1940, 56, 367–381.
15. Pintner, Eisenson, and Stanton: Op. Cit.
16. Berry, Gordon: *The Psychology of Progressive Deafness.* J.A.M.A. 1933, 101, No. 21.
17. Welles, H. H.: *The Measurment of Certain Aspects of Personality Among Hard-of-Hearing Adults.* Teachers College Contributions to Education, No. 545. Columbia University, New York 1932.
18. Pintner, R.: *Emotional Stability of the Hard-of-Hearing.* J. Genet. Psych. 1933, 43, 293–311.
19. Ramsdell, D.: *The Psychology of the Hard-of-Hearing and the Deafened Adult.* Chapter 16, p. 392–418. Hearing and Deafness, Murray Hill Books, New York, 1947.
20. Heiner, Marie H.: *Hearing is Believing.* World Publishing Company, Cleveland, 1949.
21. Ramsdell, D.: Op. Cit.
22. Walsh, T. E.: *The Surgical Treatment of Hearing Loss.* Chapter 5, p. 101–121. Hearing and Deafness, Murray Hill Books, New York, 1947.
23. Silverman, S. R. and Taylor, S. C.: *The Choice and Use of Hearing Aids.* Chapter 8, p. 211–254. Hearing and Deafness, Murray Hill Books, New York, 1947.
24. Carhart, R.: Auditory Training. Chapter 10, p. 276–300, *Hearing and Deafness.* Murray Hill Books, New York, 1947.
25. Heiner, M. H.: Op. Cit.
26. Berry, G.: Op. Cit.
27. Ramsdell, D.: Op. Cit.

THE PARTIALLY SEEING

Marjorie A. C. Young

To those who have given considerable attention to the study of visual difficulties there seems to be ample evidence that impairments in the functioning of the visual mechanism may not only affect total personality development, but also seriously impede the efforts of individuals to adjust to scholastic, social, and vocational situations. For many reasons a visual problem which may prove to be a serious impediment to one individual may not affect another to any appreciable extent and the same type of difficulty or even the same degree of difficulty may produce entirely different effects in different individuals.

DEFINITION AND SCOPE OF THE PROBLEM

Before discussing certain psychological patterns it is necessary to define what is meant by the term "partially seeing." In general, the following groups are considered to be in the partially seeing category: (1) those having a visual acuity between 20/70 and 20/200 in the better eye after all medical and optical help has been provided; (2) those with serious, progressive eye difficulties; (3) those suffering from diseases of the eye or diseases of the body that seriously affect vision.

In addition, status as partially seeing individuals may be applicable to those who have lost an eye or the sight of an eye and who are in need of psychological readjustment or of readaption in the use of vision *(1)*.

Few reliable statistics are available on the number and kinds of partially seeing persons in our adult population. Sampling surveys of the number of partially seeing children in the school-age population have been undertaken in several areas of the country and the results of these indicate that, on the average, one child in five hundred falls within the category of the partially seeing. Since both the number and severity of eye defects are known to increase rather consistently with age, there will be an ever-increasing percentage of partially seeing individuals in the population as the age scale is ascended.

CAUSES OF PARTIAL SIGHT

What are the specific causes of reduced vision in this segment of the population? Until recently, no accurate data on causes of

TABLE I.—*Distribution of Partially Seeing Pupils By Cause and Degree of Defective Vision*[1]

Cause	Totals by Cause			Visual acuity, better eye after correction						
	% of Total	Boys	Girls	Better than 20/50	20/50 up to 20/70	20/70 up to 20/100	20/100 up to 20/200	20/200	Less than 20/200	Not reported
DEVELOPMENTAL ANOMALIES OF STRUCTURE	21.5	893	682	165	166	224	244	381	254	141
Cataract and/or dislocated lens	11.3	476	346	110	99	111	110	188	126	78
Albinism	3.7	140	134	10	14	39	50	99	35	27
Other (specify)	4.3	175	142	39	40	46	55	57	52	28
Multiple anomalies	2.2	102	60	6	13	28	29	37	41	8
DISEASES OR DEFECTS OF EYE DUE TO										
Infectious diseases	3.4	123	124	35	31	54	34	39	40	14
Injury	1.5	83	25	35	13	20	7	18	10	5
Other (specify)	.4	14	19	10	3	2	2	6	9	1
Cause(s) unknown	4.9	218	139	35	29	58	56	70	68	41
REFRACTIVE ERRORS	48.7	1939	1623	1098	706	673	351	239	103	392
Myopia (incl. myopic and mixed astigmatism)	35.5	1340	1259	763	484	494	272	198	80	308
Hyperopia (incl. hyperopic astigmatism)	12.8	580	353	326	216	174	76	39	22	80
Type not known	.4	19	11	9	6	5	3	2	1	4
DEFECTS OF MUSCLE FUNCTION	18.2	848	482	362	214	258	143	169	83	101
Squint (incl. strabismus and amblyopia ex anopsia)	8.8	395	251	295	111	87	30	53	31	39
Nystagmus	9.4	453	231	67	103	171	113	116	52	62
CAUSE UNDETERMINED	1.4	61	37	14	5	20	12	26	4	17
NUMBER		4179	3131	1754	1167	1309	849	948	571	712
PER CENT	100.0	57.2	42.8	24.0	16.0	17.9	11.6	13.0	7.8	9.7

[1] Data include children in 600 sight-saving classes in 37 states, the District of Columbia and Hawaii.

See table III, for detail by cause.

partial sight were available. During the 1950-51 school year a study of visual handicaps of children enrolled in all types of organized educational facilities for the partially seeing was undertaken. Complete reports on cause and degree of defective vision of 7,310 partially seeing children were obtained *(2)*. This total represents about 92% of all such children attending sight conservation classes in the United States, the District of Columbia, and the Territory of Hawaii. The classification of causes used in this study is condensed from the standard cross-classification by nature of eye affection and by etiology used in studies of causes of blindness, since there are considerable data already available in this area which can be used for comparison when desired.

Cause	Boys	Girls
Developmental anomalies of structure	175	142
Aniridia	7	10
Buphthalmos	37	22
Coloboma	19	6
Microphthalmos	5	5
Retrolental fibroplasia	4	4
Retinal degeneration (incl. retinitis pigmentosa)	46	52
Amblyopia, undefined	18	18
Other and not specified	39	25
Diseases or defects of eye due to		
Tumors	11	17
General diseases	3	2
Causes unknown	218	139
Affections of cornea	10	8
Affections of choroid and/or iris	27	19
Affections of choroid and retina	30	25
Affections of retina (incl. detachment)	9	4
Affections of optic nerve	100	51
Other and not specified	42	32

Almost one-half of the children included in the study (48.7%) were reported to have refractive errors as their most significant handicap. More than one-third of the total (35.5%) are myopic (nearsighted).[1] Second on the list of all causes is hyperopia (farsightedness) which constitutes 13% of the total. More than one out of five partially seeing children (21.5%) have developmental anomalies of structure, the most common defects being cataract, dislocated lens, albinism, retinal degeneration (including retinitis pigmentosa), and buphthalmos (see table No. 2).

Other causes may be ascertained directly by reference to Table No. 1. One fact of special significance is that in most cases the eye

[1] See section on *Common Eye Defects* for explanations of eye conditions.

conditions causing visual handicaps are developmental, which suggests that those having such defects could and should be found well before school age. If widespread case-finding programs could be established, the chances of having corrective care initiated before defects have progressed to a serious stage would be greater. Also, partially seeing children could be given the advantages of special educational adjustments as soon as they begin school work, rather than at a later date after undesirable habits, behavior pattern, and attitudes have developed.

EDUCATION OF THE PARTIALLY SEEING

Whether the child be partially seeing or have merely a vision defect necessitating general eye hygiene measures, he needs to be prepared to work, play, and live among the normally seeing. Since the needs of a partially seeing individual center around the need for normal development in a natural environment, any program which provides an artificial or segregated life would fail to meet this fundamental requirement. Furthermore, success or failure in adulthood often appears to depend upon the nature of early school experiences. The development of emotionally healthy and socially responsible adults is so intimately related to educational experience that it is desirable herein to consider briefly the specific patterns of educating partially seeing children in the United States and the effects of each type upon the total development of the individuals involved.

There are in the United States at present four distinct patterns of educating partially seeing children:

(1) *Placement in Schools for the Blind.*—For many decades authorities have recognized the following disadvantages of educating partially seeing individuals with the blind. First, the partially seeing receive most of their environmental impressions through the sense of sight, therefore, most of the methods and materials used in educating them will utilize visual stimuli. Blind individuals, on the other hand, use the sense of touch and therefore require entirely different educational tools and techniques. Second, it is psychologically and pedagogically unsound constantly to expose partially seeing individuals to blindness, since the majority of them will never be totally blind. Also, most authorities in the fields of social work, education, and child development feel that children develop to optimum advantage physically, mentally, emotionally, and socially when they are retained in their own homes and communities.

In addition, following their years of formal education, partially seeing individuals will be expected to live with their normally seeing companions with whom they will have to compete for a livelihood. This necessary and vital adjustment will be made

212229°—52——12

more readily when there has been an approximation of normal working conditions during the prolonged period of educational and vocational training.

(2) *Placement in Special Schools.*—The plan of placing partially seeing children in special schools is somewhat better than that of placing them in schools for the blind not only for the reasons stated above but because there is a much greater possibility of keeping them in their own communities or within easy commuting distance.

However, in special schools, partially seeing children are usually members of a segregated group, "the sight conservation class," and they engage in cooperative activities only with children who are "abnormal" in some respect, e.g., the hard of hearing, deaf, epileptic, or cardiac.

In evaluating this type of training for the handicapped one must take into account that the very experience of participating in such classes has some emotional reaction for the child which may adversely color his capabilities for adjustment.

(3) *Placement in Segregated Classes in the Public Schools.*—The chief advantage of this plan over the preceding one is that it allows the partially seeing child to have some, albeit casual, contacts with normally seeing children who are housed in the same building. Also, with this type of arrangement more partially seeing children can be served in their own communities. However, the ill effects of segregation are very real, not only to the children enrolled but also to their parents and to the professional personnel serving the children. Ophthalmologists, psychologists, social workers, and orthoptists are increasingly vocal in expressing their dissatisfaction with all programs requiring educational or social segregation.

(4) *Cooperative Placement Plans.*—There are two types of cooperative placement depending upon the homeroom situation of the child. In one type, the most prevalent up to now, the child is enrolled in a special "sight saving" class which serves as his base of operations. He leaves this class several periods each day to join his normally seeing classmates in all activities not requiring continued use of the eyes. All close eye work is done in the special classroom under the direction of a specially prepared teacher.

More recently, communities in several states have enrolled partially seeing children with the normally seeing in regular classrooms. The partially seeing children remain in their homeroom for all school activities, curricular and extra curricular, excepting those requiring concentrated eye work, for which they use the specially equipped classroom. This plan accentuates the positive attributes of the child and minimizes his handicap. As a matter

of fact, since in so many of the modern schools all classrooms actually embody the sight-saving principles related to ease and comfort of seeing, *(3)* the visually handicapped child has less need than formerly to resort to the special environment offered by the special classroom.

From even this brief analysis of educational patterns it should be obvious to professional workers that many psychological problems of the partially seeing either stem from or are associated with school experiences. However, it is well to remember that the effects of visual defects are related to other factors such as insecurity at home; poor preschool training; unwholesome social conditions, e.g., overcrowding, inadequate recreational facilities, and economic strain; discrepancy between the individual's intellectual achievement and the expectations of the home and school. If parents have placed great stress on educational attainments and on marks, the individual may feel not only a personal disappointment because of his inability to "measure up" in his schoolwork because of his visual difficulty, but also a threat to the security of his place in the family.

Since the individual's happiness as well as his success is closely related to a wise choice of occupation or profession, consultation between the vocational personnel and the teachers of the partially seeing is most helpful in obtaining desirable results.

COMMON EYE DEFECTS

Generally speaking, vision is the most important sense involved in sustained effort of practically every sort. Although many individuals with serious visual defects are able to make satisfactory adjustments to the limitations imposed upon them by the reduction in vision, others will be affected in a variety of ways, depending upon the nature and extent of their handcaps. It cannot be too strongly emphasized that the type of visual impairment from which the person is suffering may affect not only his personality, his social relationships, and his psychological reactions, but also the kind of employment he is fitted to undertake from the intellectual as well as from the physical viewpoint. Before considering some of the major emotional and social problems of the partially seeing, a brief explanation of prevalent eye defects is in order.

Refractive errors

Reference to Table I indicates that almost one-half of all children at present enrolled in all types of organized educational facilities for the partially seeing have refractive errors. About 36% of the total number have myopia.

Myopia, or nearsightedness, is almost always due to lengthening of the diameter of the eyeball from front to back. There are two

main types of myopia: primary, or physiologic, and secondary, or pathologic. Primary myopia embraces the great majority of cases and is probably a biologic, healthy variation of the normal refractive state, with vision usually correctible to normal, or near-normal standards. It includes myopia of both low and high degrees and usually becomes stationary at about age twenty. Secondary myopia, which is usually progressive, results from disease affecting the tissue coats of the eye and the underlying cause is unknown. The degree of visual impairment depends upon the extent of the destructive changes in the eye tissues and in severe forms of progressive myopia the vision is often markedly reduced. Treatment consists chiefly in the prescribing of suitable glasses and in applying general health measures designed to prevent progress of the disease. Since the tissue coats of the eye are stretched owing to the lengthening of the eyeball there is always a danger of retinal detachment following those types of activity which tend to increase the tension at the areas of retinal attachment.

Hyperopia, or farsightedness, is the second most prevalent cause of partial sight in children. It is most commonly due to shortening of the diameter of the eyeball from front to back. In children, hyperopia is a normal stage in the development of the eye and, generally speaking, the younger the child, the higher the degree of hyperopia. Most individuals are still somewhat hyperopic up to the teen age. Hyperopes usually have good vision for distance but many show symptoms of eyestrain following close work such as reading, writing or sewing. Constant eyestrain often causes undue nervous tension and may ultimately bring about a sense of futility and a feeling of inferiority which may, in turn, be productive of various maladjustments. Treatment of hyperopia consists usually of prescribing proper glasses.

Astigmatism is a refractive error resulting from an irregular curvature of the cornea or of the lens, which prevents rays of light in the different meridians from coming to a single focus. It is usually combined with myopia or hyperopia and causes symptoms of eyestrain similar to those occurring with hyperopia but usually more pronounced and continuous. Astigmatism is neutralized by special glasses although in some cases of high degree it is impossible to obtain a full compensation.

Development anomalies of structure

More than one out of five (21.5%) partially seeing children have defects in this category, the majority being cataracts and dislocated lens.

Cataract.—Any opacity of the lens or of its capsule is a cataract. The effects of cataracts on vision will depend upon the size and location of the opacities. There are two main types: develop-

mental, or congenital, and degenerative, or acquired. In general, operation is the only method for improving vision in a cataractous eye. The need for operation depends upon the vision of the better eye, the visual acuity required by the person in his work, and the presence or absence of intraocular complications. The type of operation depends upon the consistency of the cataract, the general condition of the eye, and the age of the patient. In children, the lens is semi-fluid and needling (discission) is the operation usually performed. Normally, this is repeated a number of times. In older people, the nucleus becomes hard and yellowish and extraction is the customary operative procedure. After either operation all patients except high myopes require strong convex glasses since the loss of the lens causes a high degree of hyperopia usually accompanied by astigmatism. They have also lost power to accommodate and therefore need bifocals.

Dislocation of the Lens.—This condition, which is caused by some defect in the suspensory ligament of the lens, may be either congenital or acquired and it may be partial or complete. Congenital dislocations are often hereditary and are usually partial and bilateral. Acquired dislocations are caused either by direct blows upon the eye or by degenerations of the suspensory ligament following internal diseases of the eye.

In partial dislocations there is considerable myopia and astigmatism over the area corresponding to the lens and marked hyperopia in the lensfree area. This causes double vision (diplopia) since two images are formed on the retina. Sometimes the dislocated lens becomes opaque, causing additional visual disturbance. Treatment for partial dislocation consists in providing suitable glasses to correct for the hyperopia.

In complete dislocations the lens may move forward into the anterior chamber or backward into the vitreous. The eye then becomes extremely hyperopic and to avoid secondary complications, the lens should be removed.

Albinism.—This is an inherited condition associated with a deficiency of pigment in the retina and iris which causes the pupils to appear pink or red. It is accompanied by defective vision, intolerance to light (photophobia), and rapid involuntary movements of the eyeballs (nystagmus). Myopia and high degrees of astigmatism are almost constant concomitants. Vision is always poor and often extremely defective. Treatment consists in providing tinted, dark, or dark stenopaic (slit-opening) spectacles.

Retinitis Pigmentosa.—This is a chronic, progressive, degenerative disease of the retina with a hereditary tendency. It may occur early in childhood or it may not manifest itself until middle age. One of the earliest symptoms of this condition is night blindness

which becomes more pronounced as the patient gets older and the disease progresses. The visual fields are gradually constricted from without, inwards, leaving only a small field of central vision which may be destroyed later. At present, no known treatment is successful in improving the condition or in arresting the progress of the disease.

Aniridia.—This is a rare hereditary defect characterized by absence of the iris. This causes the pupil to appear larger since it occupies the entire area of the cornea. Photophobia, poor vision, and nystagmus are usually present. This condition responds to the same treatment as that used for albinism.

Other defects

Glaucoma.—This is a prevalent eye disease characterized by increased pressure within the eye which causes hardening of the eyeball. The real cause of this hardening is unknown but the symptoms are pretty well understood. If treated early, the disease can be controlled and the remaining vision saved. Some cases can be controlled by regular instillations of prescribed drops. When drops fail to control the pressure, operation is necessary.

Coloboma.—This term indicates a congenital anomaly in which a portion of the structure of the eye is lacking. Heredity plays a large part in many of the cases. The effect of a coloboma on visual function will depend on its location and on the specific tissues involved. There is usually a blindspot or field defect (scotoma) corresponding to the location and extent of the defective structures. If such defects are in the lower field, the individual will have to bend his head down in order to look out over the blacked out area; if the defect is in the upper field, the person can hold his head high and has greater possibilities for work.

(For additional details on all eye defects, see reference No. 4).

PROBLEMS OF PERSONAL ADJUSTMENT

Anxiety over feeling different from others is a fundamental reaction with both organic and psychological components. Usually there is an interrelationship between physical defects and personality difficulties which makes them inseparable. There is some evidence indicating that the rate of neuroses in ophthalmic practice is higher than in general practice and that, as the psychoneurotic factor increases, the visual symptoms also increase.*(5, 6)* This probably is due in part to the fact that efficient sight necessitates greater coordination of both automatic and conscious neuromuscular processes than does any other special sense. Also, individuals with eye difficulties have had less access to help from psychiatric and social work services than have individuals with some other types of special problems. Often an individual's neuro-

sis is due to his being unaware of the nature of his defect. When this is thoroughly explained and he is given help in compensating for it or a chance to function in activities not requiring the specific abilities he lacks, his emotional state improves.

Emotional and social implications of eye defects are numerous and varied. In considering the subsequent paragraphs it is well to remember that generalizations about emotional factors or their significance are impossible, for what a deformed eye or reduced vision may mean to one individual it may not mean to another. Also the visually handicapped person has problems of adjusting to the attitudes of a variegated society as well as to his personal difficulty. The reactions of his family, the community attitudes, and his own feelings about his handicap, are major factors in determining total adjustment.

Visual handicaps may be directly related to the development of fearfulness and dependency. If the visual defect necessitates depending partly upon others, the individual may have been retarded in the early years when he should have been achieving independence and self-assurance. For this reason, early diagnosis and treatment are important before dependency has become deep-seated. If emotional blocking exists in the parents or those closely related to the individual, the problem may be intensified.

Fears and doubts may result from repeated years of unequal competition in the home or school. Persons with subnormal vision, unaware that they cannot see as well as their companions, may not understand why they have been less able to get ahead.

Some attempts have been made to study the relationships between visual defects and problems of delinquency *(7, 8)*. One investigator found that refractive errors are more numerous in delinquents than in the normal school population, suggesting the possibility that visual impairment may cause discomfort and maladjustment in school, followed by truancy which, in turn, may lead to delinquency *(7)*. Another case study describes the effects of loss of an eye through injury, which resulted in disobedience, quarrelsomeness, temper tantrums, truancy, and cruelty. These traits were developed to compensate for the feelings of insecurity resulting from ridicule by schoolmates. The visually handicapped adolescent tried to protect himself and to regain status by being "tough."

Visual imperfections may be congenital or acquired. Their influence or personality development depends upon the moment in which they appear and on the time the physical impairment takes to become evident to the individual and to others. Some defects, such as crossed eyes (strabismus) appear early in life but are not particularly damaging to the emotional and social development of the individual until school age. Unless the eyes are straightened

before this time the individual may become very shy, introverted, embarrassed, and antisocial. Many adolescents and young people have made excellent social adjustments following corrective surgery to improve cosmetic effect. However, it cannot be expected in all cases that the psychologic problems established over a number of years will vanish immediately after corrective treatment has been administered.

Disfigurements such as those associated with albinism, drooping eyelids (ptosis), congenital glaucoma, and strabismus may cause individuals to shrink from wholesome social experiences in order to avoid embarrassment, feelings of hurt or inferiority. These reactions will be minimized if the educational programs to which the persons have been exposed have provided opportunities for constant and varied social contacts with normally seeing companions.

Myopes may be frequently introverted, selfish, and self-centered, and engage unduly in solitary or other activities not conducive to social adjustment or optimum mental health. Because their distance vision is poor and they cannot cope with their playmates in competitive sports and games, they resort to reading and other close eye work. The lack of physical activity may result in bad postural development and in poor general health. And in cases of progressive myopia, the concentration on close eye work may contribute to further or more rapid deterioriation of vision.

On the other hand, hyperopes may become lazy, inattentive, mischievous, and extroverted. Because their distance vision is superior to their near vision they may become interested and adept in athletics and have no interest in the ordinary school activities of reading, writing, and arithmetic which involve close eye work.

If an eye disorder is progressive, as in the case of retinitis pigmentosa, and some forms of myopia and glaucoma, everything should be done to prevent the development of feelings of anxiety about becoming blind by full and imaginative use of existing community resources. It is unwise to recommend Braille or other activities associated with blindness until loss of sight actually requires these. To prepare a partially seeing individual for total blindness before his sight has gone may produce a very adverse emotional effect and may militate against future successful placement and rehabilitation.

Most individuals with visual handicaps at some time will feel rather resentful and will want to know "whose fault it is" and whether the defect could have been prevented. Furthermore, they will wish to know whether the handicaps are likely to be passed on to their children.

In the majority of cases, eye diseases or defects are produced by a combination of hereditary and environmental factors, therefore

the cause can be determined only by an exhaustive study of the family history and of the conditions prevailing during the prenatal period.

Congenital eye defects are usually present at birth but are not necessarily hereditary. Some result from an arrest or lack of structural development; others are due to intrauterine inflammation or infection. In some cases both factors are believed to be responsible for producing the eye anomaly. Recently several causes of congenital ocular malformations have been highlighted in both the professional and lay literature. German measles, and some other virus diseases, such as mumps and chickenpox, in the mother during the first three months of pregnancy may produce cataracts, pigmentation of the retina, corneal opacities, and microphthalmus (abnormally small eyes), as well are impairments of other organs. Prematurity may predispose toward an eye disease known as retrolental fibroplasia. More than ten percent of infants weighing less than three pounds at birth have subsequently developed this condition which may produce cataracts, retinal folds, retinal detachment, glaucoma, partial blindness or complete atrophy of the eye. At present there is no known cause or cure.

Maternal nutritional deficiencies and birth injuries and infections may also cause permanent congenital lesions of the eye. Congenital syphilis often produces corneal opacities which result in partial sight.

A relatively large proportion of the known eye defects and diseases can be attributed to heredity. In the case of purely hereditary defects, the genes associated with various characteristics of eye structure and function will influence the formation of the defects, regardless of other factors and in accordance with various patterns of hereditary transmission. Eye defects are usually transmitted as dominant, recessive, or sex-linked traits, but two individuals with similar defects may exhibit quite different patterns of heredity *(9)*.

All three of the patterns have been reported in studies of the several specific varieties of congenital cataract. Adult primary glaucoma usually follows the dominant pattern, while buphthalmos (abnormally large eyeball) occurs most frequently in sex-linked recessive and simple recessive patterns.

Retinitis pigmentosa is another eye disease that exhibits all three patterns of transmission. *Albinism* is usually inherited as a recessive characteristic. *Progressive myopia* displays a dominant pattern in some families and is recessive in others. *Hereditary optic atrophy* (Leber's disease) and *color blindness* are examples of sex-linked defects.

Although ocular abnormalities may be eliminated in certain families by eugenic control, genetic advice should not be given

without a careful, exhaustive study of the specific family concerned. Afflicted individuals should be thoroughly informed about the genetic background of their specific eye diseases and they, and they alone, must decide whether to take the chance of transmitting handicaps to their children.

VOCATIONAL PROBLEMS OF THE PARTIALLY SEEING

During the early school years each individual's special talents and interests should have been discovered and developed so that when the time comes for him to choose a vocation he will have a fairly clear idea of the criteria by which to govern his choice. We must not handicap the partially seeing psychologically by offering them too much assistance nor prejudice their employers by emphasizing the visual differences. A visual difference may be quite apparent but it is not necessarily very limiting. Overemphasis of the limitation may result in consequent overprotection and a narrowed outlook on vocational possibilities. On the other hand, refusal to recognize the limitation may, in some cases, cause the individual to adopt a never-say-die spirit which enables him to forge ahead but at a terrific cost to his vision.

The uninitiated often fail to recognize that the partially seeing are just as capable of success in professions and skilled occupations as are the normally seeing, provided that the eye condition and the attitudes of those counseling the individual do not preclude the necessary educational and experiential background. It is not sufficient to think only in terms of the degree of the handicap and to neglect consideration of its nature. Job placement must take account not only of what the individual can do but also of what he should be permitted to do, for poor vision may cause hazards to others as well as to the partially seeing person. Those with progressive myopia who are subject to retinal detachment should avoid occupations involving heavy lifting, pushing, pulling, jumping, or running. Construction jobs may prove extremely hazardous for them because of the danger of tripping over boards, beams, etc., or of falling into holes. Low vision from causes other than refractive error poses an entirely different problem. Choice of work for these individuals is limited largely by lack of visual acuity and not by the harm which may result from the use of the eyes.

Individuals with glaucoma should eschew job situations necessitating great pressure or producing emotional strain, both of which affect intraocular tension adversely.

Persons with retinitis pigmentosa and some other degenerative diseases cannot function under low levels of illumination; conversely, those with aniridia and albinism cannot tolerate excessive light. These facts must be taken into consideration in vocational counseling and job placement.

Evaluation of an individual's visual functions is not the only factor to be considered in selecting the proper job. It is also necessary to analyze very carefully the visual requirements of the job *(10)*. In addition, individuals vary markedly in their ability to adjust to their handicaps and to adapt themselves to specific jobs.

Eyesight cannot be appraised by the use of a single test because seeing is a composite process involving several important components which aid and supplement one another. Chief among these, from the standpoint of occupational selection and placement are:

1. *Central visual acuity of each eye.*—This is the ability to recognize the form of objects in the direct line of vision. It varies with the size and distance of objects, with the condition, size and shape of the eyes, and tends to decrease with age. This function should be tested for distance seeing (20 feet and beyond), for near vision (14-16 inches) and for the working distance demanded by the job, if this distance differs from the preceding two. (See references 11 and 12 for details of testing). The individual is classified according to the visual acuity obtained after correction with glasses, if they are required.

2. *Binocular vision.*—This is the ability to use the two eyes simultaneously to focus on the same object and to fuse the two images into a single image which gives a correct interpretation of its solidity and its position in space (depth perception or perspective). One-eyed individuals should not be placed in jobs requiring the ability to judge distance and position of objects, since their function of depth perception has been destroyed. They should avoid chauffeuring, crane operation, and jobs where the work or moving objects approach from the blind side.

3. *Muscle action.*—This is the ability to turn the eyeballs in all directions and to maintain balanced action of the two eyes so that the images fall on corresponding points of the two retinas.

4. *Peripheral vision.*—Ability to perceive the presence, motion, or color of objects in the space surrounding the direct line of vision. Any contractions or blind spots in the field of vision constitute a serious hazard in occupations such as operating motor vehicles or moving machinery in which awareness of objects approaching from the sides is essential.

5. *Color vision.*—Ability to perceive the primary colors—red, green, blue (see references 13 and 14 for testing techniques). Color-blind individuals should not be directed into jobs where color discrimination is essential, e.g., certain electrical work (such as in radio and radar plants) requires use of colored wires; railroad engineering, etc.

Fortunately, most jobs do not necessitate perfect coordination of all visual functions and it is fairly simple to determine by inspec-

tion whether a certain type of visual ability is essential in a given occupation. Visual job analysis will serve to place partially seeing individuals in situations where their eyesight can be used to optimum advantage. An effective job analysis can be made only by watching work in performance, and it should be a cooperative undertaking in which the plant medical director, consulting eye physician, production, illuminating, and safety engineers, personnel director and supervisors make their respective contributions as necessary *(15)*.

Review of an occupation with a view to placement should include a check on conditions directly related to eye comfort, efficiency, and safety. The following general principles apply to all jobs:

(1) *Lighting.*—It is impossible to advocate fixed standards of lighting because the type and amount of light needed vary with the nature of the work and with the condition of the individual's eyes. In general, the light should be well distributed, free from glare, and directed so that it will not shine into the eyes and it should be adequate in amount for the task to be performed.

(2) *Plant Housekeeping.*—This pertains to proper decoration and care of equipment and surrounding surfaces to relieve monotony, to prevent eye fatigue and to accentuate areas and objects. The use of contrasting colors on stationary and moving machine parts is a good safety measure. To obtain maximum lighting values, periodic schedules of cleaning, painting, and replacements should be established.

(3) *Arrangement of Work.*—Length of periods of close visual work, motion, and eye span required are factors in the amount of ocular fatigue generated and in the visual efficiency of the worker. Long periods of close, detailed work are fatiguing. Alternating periods of close and distant work help to prevent undue eyestrain. Motion of the work itself is conducive to visual fatigue and may be too fast for efficient seeing by many partially seeing individuals. Motion in the area surrounding the work may cause visual distractions. If the work is spread out over too large an area, time may be lost and fatigue increased by the need for continuous visual adjustments involving head and eye movements.

(4) *Eye Protection.*—No job analysis is complete unless eye hazards are considered and correct types of eye protection are carefully specified. Even the most minor possibilities of eye injury should be taken into consideration so that there will be no danger whatever to the residual vision of the partially seeing individual. In any case, there is always the possibility of serious complications resulting from even a slight eye injury.

There are three essential requirements that must be met if

individuals with varying types and degrees of vision are to work to optimum advantage: *(16)*

1. A careful analysis of the individual's qualifications with particular attention to his assets, liabilities, and attitudes.
2. A complete analysis of the visual and other requirements of the job to be undertaken.
3. The actual placement of the individual solely on the basis of his total qualifications—physical, mental, and emotional.

REFERENCES

1. Hathaway, Winifred: *Education and Health of the Partially Seeing Child.* New York: Columbia University Press, Revised 1948.
2. Kerby, C. Edith: *"A Report on Visual Handicaps of Partially Seeing Children."* Exceptional Children, February, 1952, Vol. 18, No. 5.
3. Illuminating Engineering Society. *American Standard Practice for School Lighting.* Illuminating Engineering Society, 1860 Broadway, New York, N. Y. 1948.
4. Perera, Charles A.: *May's Manual of the Diseases of the Eye.* Baltimore: Wilkins Company, 1949. Twentieth Edition.
5. Bahn, Charles A.: *"The Psychoneurotic Factor in Ophthalmic Practice."* American Journal of Ophthalmology, April, 1943, Vol. 26, No. 4.
6. Hibbeler, Helen: *"Personality Patterns of White Adults With Primary Glaucoma."* American Journal of Ophthalmology, February, 1947, Vol. 30, No. 2.
7. Wallace, Eugene: *"Physical Defects and Juvenile Delinquency."* New York State Journal of Medicine, November 1, 1940, Vol. 40, No. 21.
8. Blumenthal, Fritz: *"Physical Defects in the Genesis of Juvenile Delinquency."* New York State Journal of Medicine, September 1, 1941, Vol. 41, No. 17.
9. Falls, Harold F. *"Congenital and Hereditary Eye Diseases."* Sight-Saving Review, Summer, 1949, Vol. 19, No. 2.
10. Kuhn, Hedwig S. *"Visual Job Analysis and Prescribing for Special Work Distances."* Sight-Saving Review, 1943 Supplement, Vol. 13, No. 4.
11. National Society for the Prevention of Blindness. *Screening, Eye Examinations, and Follow-up,* Pub. No. 443, National Society for the Prevention of Blindness, 1790 Broadway, New York 19, N. Y.
12 National Society for the Prevention of Blindness. *A Guide for Eye Inspection and Vision Testing,* Pub. No. 485, National Society for the Prevention of Blindness, 1790 Broadway, New York 19, N. Y.
13. Hardy, Le Grand H.: *"Color Vision Testing."* Sight-Saving Review, Winter, 1951, Vol. 21, No. 4.
14. Chace, R. R.: *Color Vision and Color Vision Testing,* Pub. No. 486, National Society for the Prevention of Blindness, 1790 Broadway, New York 19, N. Y.
15. Stump, Frank: *Job Analysis as Related to Visual Skills.* Pub. No. 491, National Society for the Prevention of Blindness, 1790 Broadway, New York 19, N. Y.
16. Lester, Eileen: *"Opportunities for the Visually Handicapped Through Job Analysis."* Sight-Saving Review, Spring, 1943, Vol. 13, No. 1.

OTHER REFERENCES

Hackbusch, Florentine: *Psychological Study of Partially Seeing and Children with Other Visual Problems,* Pub. No. 142, National Society for the Pre-

vention of Blindness, 1790 Broadway, New York 19, N. Y.
Raycroft, Joseph E.: *"Character and the Special Senses."* Transactions of the American Academy of Ophthalmology and Otolaryngology, November-December, 1943.
Wilkinson, Arthur P.: *"Eyesight in Mental and Physical Development."* Sight-Saving Review, December, 1933, Vol. 3, No. 4.

THE BLIND

Berthold Lowenfeld

DEFINITION, PREVALENCE, AND CAUSES OF BLINDNESS

The visual impairment covered by the term blindness extends from total blindness to a visual acuity defined as follows: "Central visual acuity of 20/200 or less in the better eye, wth correcting glasses; or central visual acuity of more than 20/200 if there is a field defect in which the peripheral field has contracted to such an extent that the widest diameter of visual field subtends an angular distance no greater than 20 degrees." The Snellen chart measurement of 20/200 indicates that an object that can be perceived by the normal eye at a distance of 200 feet must be brought close to 20 feet in order to be discerned by the visually handicapped person. The specified field defect means that the eye when focused at reading distance discerns clearly no more than the area of about an ordinary book page, although in this limited field of vision the eye may have anything up to normal central visual acuity. Any person who has either a loss of visual acuity as above defined, and estimated by medical authorities as an 80% loss, or a field defect of such serious nature, is considered as blind for economic purposes.

According to the best available estimates the number of blind persons in the United States is at present in excess of 260,000 which means a rate of 17 blind persons per 10,000 of the general population. Difficulties in reporting and individually determining the extent of the visual handicap prevent gaining more accurate statistics concerning the prevalence of blindness.

The age composition of the blind sector of the population shows the proportion of young blind people to be much smaller and that of old blind people much larger than in the general population. This is mainly a result of improved control of causes of blindness among children and of increasing longevity of the general population. It has been estimated that less than 10% of the blind are under 25 years of age and more than 65% over 55 years of age. Studies have also shown that there are more blind men than women and that blindness is more prevalent among the non-white than the white population. The annual incidence of new cases of blindness has been estimated as 6.6 per 100,000 population.

The Bureau of Public Assistance of the Social Security Administration conducted a study of the reports of eye examinations

of more than 20,000 adult recipients of aid to the blind during the years 1940-41.* Cataract was most frequently reported as the cause of blindness (24.4%). Optic Nerve Atrophy (12.8%) and Glaucoma (11.7%) rank next in importance. Data on causes of blindness among school children for the year 1949-50 indicate that 64.1% of blindness is of pre-natal orgin, 13.8% is due to infectious diseases, 7.3% to injuries, and 4.6% due to tumors. In recent years retrolental fibroplasia, an eye defect developing almost exclusively in prematurely born infants, has become the most important single cause of blindness in children.

ATTITUDES TOWARD BLINDNESS

Society has regarded and treated the blind in three distinct ways —as liabilities, as wards, and as members. In the early days of mankind when struggle for survival brought individuals together to form a tribe, any member who could not fully contribute to the fighting force of the group was a liability and therefore eliminated. For many centuries the blind were held in this liability status and historical writings give supporting evidence for its wide spread and long duration. The growth of the monotheistic religions brought about a decisive change. The blind were given the right to live and the right to be protected. The early church considered them as its special wards and throughout the Middle Ages they, together with children and the aged, were considered as preferred receivers of charity. The end of this period came when an increasing number of blind individuals proved to themselves and to their contemporaries their capabilities by outstanding achievements which aroused the attention and devotion of those who became the pioneer educators of the blind. The establishment of educational facilities stands at the beginning of the third historical phase, that of integration of the blind into society. Growing acceptance of the blind in public school systems, in industry and professions, and in the social life of their communities, supplies evidences for the trend toward integration though it must be recognized as far from its ultimate achievement. Individual reactions toward the blind as well as social institutions purporting to serve them are still often influenced by the "liability" as well as the "ward" attitudes.

However, if this interpretation of our present status is accepted, an objective is gained for our efforts and programs and a criterion for what is desirable and undesirable in work with the blind. Institutions and services for blind individuals, unimpeded by further handicaps, which tend to keep them separate are regressive. Programs which aim at the integration of the blind and instill in

* Hurlin, R. G., Saffian, S., and Rice, C. E. *Causes of Blindness Among Recipients of Aid to the Blind.* Federal Security Agency, Social Security Administration, Bureau of Public Assistance, 1947. pp. 131.

them the spirit of independence by strengthening those qualities and skills which will enable them to take their rightful place as members of their society are progressive, desirable, and in the best interest of the blind.

Underlying these cultural-social patterns are individually determined attitudes toward the blind which may find overt expression or influence actions and reactions unconsciously. Fear, guilt, pity, unrestrained curiosity, and compulsive helpfulness are some of these reactions which result in pressures working against the blind, individually and as a minority group. Deprivation of sight is by many regarded as the greatest misfortune next to loss of life itself. The dominating role which sight plays in the activities of men and, as a natural concomitant, the inferior role to which the other senses are relegated, form the basis for this conviction. It is strongly supported by a process of early conditioning which presents the blind in fairy tales and folklore as helpless beggars and uses them for moralizing purposes as examples of an underprivileged group which lives only by the grace of the good deeds of others. The commonly accepted connotation of the word "blind" as in "blind alley." "blind fury," etc. also reinforces negative attitudes. Religious influences and naive concepts of justice as well as superstitions explain blindness as retribution for sins committed by parents or ancestors or put the responsiblity for his blindness on the blind person himself.

While the above given discussion of public attitudes toward the blind has only corroborative evidence, a research study provides scientific evidence concernng the attitudes of parents toward their blind child. Sommers (8.) distinguishes five types of parental reaction to the child's handicap: Acceptance, denial that the handicap has any effect on the child, overprotection, disguised rejection, and overt rejection. Acceptance and denial are considered desirable modes of adjustment, the latter one because it still gives the child the affection and opportunities he needs although it may impose on him perfectionist ideals which he will be unable to fulfill. Important for the general formation of attitudes toward a blind member of a group is the following statement which Sommers makes in connection with parents: "The meaning the child's handicap held for his parents, especially his mother, the intensity of her emotional reactions, and the kind of adjustment she was able to make seemed to depend largely on the psychological make-up of the individual parent, her marital relationships, and her own personal and social adjustment to life." (8., p. 103) Therefore it is not so much the lack of sight that determines the blind child's personality and development as the fears, frustrations, and deprivations which result from the attitudes of his parents.

212229°—52——13

The adjustive behavior of the adolescents studied by Sommers was closely related to the parental reactions and showed the following five patterns: wholesome compensatory behavior and hypercompensatory behavior, denial reactions, defensive behavior (rationalization, projection), withdrawing tendencies, and nonadjustive reactions. The first mentioned four behavior reactions are adjustive, whether for good or for ill, although they may be disapproved socially. The latter is particularly true for withdrawal, which is often coupled with a concentration on solitary activities, like listening to the radio or reading. Day dreaming and excessive fantasy belong in this category as reactions avoiding the necessity to meet reality demands. The willingness to meet or compete with similarly handicapped persons must also be recognized as a form of withdrawal. The nonadjustive behavior reactions are characterized by the inability of the individual to deal effectively with the problems of life. No definite pattern nor any dominant use of a specific adjustment mechanism can be found, but strong self-centeredness, non-sociability, lack of competitive drives, emotional instability, nervousness, and intensive worry and anxiety are frequent characteristics of this reaction form. Although this study was made with blind adolescents, the worker with the adult blind will find many of its findings applicable. Techniques of dealing with the problems are essentially the same as those applied to seeing persons who show similar reaction forms but for different reasons. In extreme cases only psychiatric treatment will offer a chance for improvement.

Workers with the blind who, if they are sincerely interested in their work, cannot help but become in varying degrees emotionally involved are subject to the same reaction patterns as parents, perhaps with less intensity. They also will be of greatest value to their clients if they develop an attitude of acceptance of the person and his handicap, not denying its influence but recognizing it and adapting their methods to it; not overprotecting the person but helping him to prepare himself for independent life; and certainly not rejecting him either in disguised or overt form. If a worker should have strong negative feelings about the blind or working with them—and personal experiences may explain such feelings—he should for his own and his clients' sakes leave this special field.

SPECIAL FACTORS

In approaching the blind individual certain factors and conditions directly influenced by or resulting from his blindness must receive consideration as potential determinants for his reactions and possible explanations for his attitudes. The central factor in his case, as in that of all other indviduals, is his personality. Personality is the psychophysical organization of the individual

as modified by his life experiences and includes thus the hereditary as well as environmental factors. Any information concerning an individual's personality includes of course those "questionnaire items" which tell us about sex, age, family status, economic conditions, past training, education, work experience, and so on. Particular attention should be given to any additional physical handicaps which the blind person may have. Impairment of hearing, for instance, has a most serious effect because it may interfere with the blind person's social contact ability or with his mobility. Besides these general variables there are specific ones directly related to the visual handicap. The development of the blind individual as well as his adjustment to his handicap are greatly influenced by the following factors:

1. *Degree of sight.* As explained in the discussion of the definition of blindness, the term covers a wide range of visual acuity from total blindness to a considerable amount of sight. In between are those who have light perception, light projection, object perception, travelling sight, and those whose acuity can be measured with the Snellen chart. Defects in the visual field causing either peripheral or central limitations also have their effects on a person's ability to travel and work. The visual acuity as determined by a test is not always a true indication of the individual's "visual efficiency," since persons with low vision may use their sight to much greater advantage than others with higher visual acuity. This may be due to such factors as general intelligence, environmental influences, and perhaps also to a hereditary inclination to certain types of imagery and learning (visual, auditory, and kinesthetic or haptic) especially if the person became blind later in life and has already become used to a preferential employment of one or the other sensory modality.

2. *Cause of blindness.* The importance of this factor can be easily understood if one considers that some visual defects are the result of systemic diseases which are not confined to the eye but require general treatment as for instance tuberculosis. The cause of blindness in an individual may also be the cause of other difficulties which must be known and considered in assessing his ability and in planning for his future. It may for instance indicate that certain activities should be avoided to prevent further impairment, such as bending, heavy lifting or sudden shock in detachment of the retina. A knowledge of the medical prognosis is essential for any planning of the person's future. Besides the medical implications, there are also psychological ones as demonstrated by the particular adjustment problems of war-blinded soldiers whose blindness resulted from other causes than enemy action. Psychologically there will also be a great difference in the reaction of a

man who became blind because of diabetes and the other who attempted suicide and injured the optic nerve resulting in his blindness.

3. *Age at onset of blindness.* Persons who were born blind, lost their sight during their youth, in their prime of life, or in old age, present different problems and require different services and training or re-trainng facilities. The question whether it is better to be born blind or to become blind later in life is a moot one. Each condition has its specific problems and difficulties which can be overcome permitting the individual to lead a personally satisfying life. However, if the individual's problems are not reasonably solved, congenital as well as adventitious blindness may be factors responsible for maladjustment. The age at onset of blindness determines the presence or absence of visual imagery. Individuals who lost their sight before about five years of age do not retain the ability to visualize their experiences, while those who became blind after this age may retain a visual frame or reference. Certain differences between those who were born blind and those who became blind later in life will be discussed later.

4. *Kind of onset of blindness.* The onset of blindness may either be sudden or slowly developing. Sudden blindness comes as a shock in which the individual not only experiences the loss of his most important sense but also reacts to blindness with all the preconceived and conditioned ideas about it which are prevalent in the public. Helplessness, tragedy, economic insecurity, inability to function as man or woman, fear of darkness, all these assumed by-products of blindness are experienced by him with the full force of identification. This shock may cause withdrawal, extreme apathy, and suicidal ideas. In the case of gradually developing blindness, feelings of indecision and insecurity are predominant. The person is not willing to accept one doctor's verdict but goes through the climbng up and down of what has been called the "hope ladder." The medical expert often cannot, and sometimes will not, make a decision as to the future chances for the patient's sight and thus causes a protracted state of instability and fear. In spite of the gravity of the reaction, human nature with its inherent desire for self-preservation is, in most cases, strong enough to recuperate and to begin adjustment. This is a slow process which develops as self-confidence is gradually regained.

5. *Eye condition and appearance.* Both factors must receive consideration because of their emotional as well as social and economic importance. The emotional effect of changing eye conditions, or of the threat of a change, by necessity causes varying degrees of tension, anxiety, and discomfort. Facial disfigurement by the appearance of the eye may need cosmetic correction in order

to avoid social and economic disadvantages. For the same reason and also for medical ones, enucleation of the eye may be advisable. It is often strongly opposed because it means giving up the last hope for restoration of sight. Besides this conscious fear there may also be deeper lying causes for this irrational resistance. The effect of the enucleation is in most cases an emotional relief from self-consciousness which resulted from the disfigurement and a physical relief from the pain which a diseased eyeball may have caused. In many cases spectacles are prescribed in order to give the optimum amount of sight. Needless to say that the prescription, fitting, and care of glasses should receive proper attention.

The careful consideration of all these variables is necessary in any attempt to assess the blind individual's capacities and in any efforts to help him in adjusting to his handicap.

SENSORY EFFECTS OF BLINDNESS

In dealing with blind persons either in a professional or social relationship the question of how blindness affects their sensory actions and reactions, their perceptions, and their imagery is one frequently brought to mind. Attempts to identify oneself with the condition of blindness by closing one's eyes are entirely inadequate so far as congenital blindness is concerned. It seems that it is just as impossible for a seeing person to understand what total blindness (from birth or early childhood on) means as it is for a person born totally blind to understand what it means to see. The former ones cannot employ the nonvisual senses without visualization and the latter ones cannot visualize their sensory experiences. However, those who work with the blind must understand the effects of blindness in order to be able to identify with their position and promote their capabilities. There are three areas in which blindness changes or modifies conditions in a distinct way:

1. *Experiencing the Object World.* Totally blind individuals must build up their conceptions of the world by the use of their nonvisual senses. In doing this they rely almost exclusively upon tactual and auditory perceptions and kinesthetic experiences. Hearing gives certain clues in regard to distance and direction but it does not convey any concrete ideas of objects as such. Its main value is in the area of communication and verbal information. Perception of space is achieved by touch in which kinesthetic sensations play a more or less important role. Tactual perception, however, has distinct limitations because of the inherent necessity for direct contact with the object observed. Objects may be inaccessible for direct contact, as for instance the sun, the horizon, or clouds; objects may be too large for tactual observation, as for instance mountains, landscapes or large buildings; objects may be too small, tender or fragile for touch observation, as for instance

some insects, some flowers, or a butterfly. Objects in motion, live objects, and objects under certain conditions, such as burning or cooking, do not lend themselves to observation by touch because they change their shapes and positions or because of the danger involved in direct contact. It must also be recognized that sight permits much more perceptual activity than touch because the eyes are almost continuously open to stimulation from the outer world while touch needs to be actively applied for the purpose of securing impressions. On the other hand the touch senses convey object qualities not given by sight which are greatly neglected by those who can see. Weight, temperature, surface qualities, hardness or softness, and three-dimensional spatial characteristics are experienced by touch observation. One of the most distinct advantages of touch is that it functions independent of light.

Unlike space perception, color perception which results from stimulation of the retina is an exclusively visual function. Therefore, totally blind persons cannot perceive color at all, although they acquire substitutive ideas for color through sensory, verbal, or emotional associations and conditioning. The idea of the color blue, for example, might be determined by the association "blue sky." Thus all or some of the different sensations and emotions caused by fine weather may build up substitutive ideas for the color blue. These ideas not only have subjective value as components of the blind individual's world of imagery, but also enable him to communicate with the seeing in common terms, though not on the basis of common experiences.

In conclusion, it might be said that spatial perceptions and concepts and color experiences are the only areas in which the experiences of individuals born totally blind are different in kind from those of the seeing.

2. *Getting About.* A blind person cannot get about by himself nearly so well and so much as the seeing person can in order to change his surroundings and secure opportunities for observation and activity. In the comparatively sheltered life of either the parental home or the residential school the restriction in mobility does not make itself fully felt. When the child grows up, he also grows out of his environment and is confronted with the task of adjustment to the world of the seeing. Then his restriction in mobility becomes a factor of major importance and carries new implications. For instance, the youngster who is transferred from residential school to public high school or graduates from the residential school, must now pursue his activities in a changed and more complex environment. If he has not been encouraged and taught to develop his ability to move about, his whole success may be jeopardized. In the extreme case, he may not only take for

granted being helped to get about, but may gradually tend to expect to be helped along all lines. Under the impact of the new environment he has fallen back to a level of protection characteristic of infancy. On the other hand, the change from the accustomed environment to a strange one with its challenge in regard to mobility, may make the blind youngster resent and even revolt against being aided in many activities which he knows seeing persons can pursue independent of others. This may develop into a general hostility toward the seeing society. Either of these attitudes, regression or hostility, if it persists as a disturbing influence indicates a basic insecurity and the need for careful guidance aiming at the building up of the invidual's self-confidence.

Research as well as training in mobility should consider the two skills which make up mobility: physical locomotion and mental orientation. Locomotion is the actual movement from place to place in which obstacles must be avoided. Orientation has been defined as the "ability of an individual to recognize his surroundings and their temporal or spatial relations to himself." Both are essential for getting about. Training in the area of mobility should aim at developing the highest degree of independence by cultivating each individual's mobility potential and by encouraging him to make use of aids individually suited to him and to the specific occasion.

Besides the individual's ability to move unaided in familiar and to a certain extent even unfamiliar surroundings, there are three aids which blind persons can and should employ as needed—human aid, the guide dog, and the cane. Skillful human aid is the most secure one but involves a high degree of dependence. Also "hiring eyes" is costly. The guide dog, if well trained on both ends of the leash, indicates to the blind person an obstacle-free space into which he can safely move. Many blind people find guide dogs their greatest asset in getting about, many others shy away from the man-animal relationship and the expenses involved in the upkeep of the dog. The cane (white colored as an identification), if properly used, indicates to the blind person a free area into which his legs may move. The upper part of his body is of course unprotected. In using guide dogs or the cane, the blind person may be able to avoid obstacles but he still is responsible for the orientation part of his mobility. He must have a "mental map" leading to his goal and must be able to continuously relate himself to it.

3. *Controlling the Environment.* A blind person cannot inform himself about his environment and his own situation within it by any such rapid process as glancing around. The clues which he may get through hearing, smell, or touch observations within his reach, are incomplete and of much less reality value in controlling

his environment and himself in relation to it. The resulting detachment affects the blind individual in different ways during his development and in various situations. The blind infant, for instances, does not reach out or crawl towards objects because they do not attract him. However, this does not affect his learning to walk and also he learns to take hold of things if he is supplied with the adequate stimulation. As he grows, his learning is somewhat more difficult because he cannot acquire behavior patterns by imitation based on visual observation. Conforming with the group behavior is for him a much more difficult task because it cannot be learned by watching others visually. Also, actions of the daily life such as eating a meal, which are simple for the seeing, assume different proportions when they are not controlled by sight. The fact that the blind person cannot be sure whether he is observed by others or when this observation begins or ends, puts him in a position where he may feel he must be on the alert and on guard against mistakes and offenses made by him and by others dealing with him. The blind worker will find it more difficult to orient himself in his working place and will need additional help in adjusting himself to the demands of an assembly or machine job situation. However, such initial adjustments taken care of, the blind worker, if properly placed, is unquestionably able to do a full sized job.

From these observations it must be recognized that the blind person is more likely to be under nervous strain and to harbor feelings of insecurity and frustration which may produce a state of anxiety liable to interfere with his mental health.

In this discussion of the sensory effects of blindness, the stress naturally had to be on the differences and modification caused by the visual handicap. The similiarities and sameness do not need any elaboration. It suffices to stress that blind people have the same developmental trends, the same abilities, drives, emotional reactions, and—except in the area of spatial perception—the same intellectual and sensory functions as other people.

There are two special problems connected with blindness in the area of sensory functions which have received a great deal of scientific investigation:

1. *Sensory Compensation.* A popular belief which has strongly influenced the early stages of scientific approach to blindness and served as a starting point for objective measurement, is that in "sensory compensation." According to it, the absence of sight leads automatically to a higher degree of acuity of the remaining senses. Scientific measurement and comparison of results secured from blind and seeing individuals have clearly proven that there is no difference in sensory acuity in favor of the blind. Some investiga-

tions even indicate that the absence of sight adversely affects the performance of the other senses. Although the acuity of the senses is not changed by blindness, blind individuals may make superior use of their sensory equipment. The absence of sight enforces increased application of the remaining senses, with a greater amount of voluntary and involuntary attention given to the nonvisual sensory data perceived. Thus, practice and concentration bring about a more skillful use and a greater efficiency of the remaining senses. A case in point is the touch reading of the blind. Braille reading and writing is based on the touch recognition of embossed dots arranged in a cell of two rows of three dots. Combinations of these six dots permit representation of the alphabet and a considerable number of contractions. The fingers used for touch reading do not show any increased sensitivity but they achieve an often amazing facility in interpreting these touch data.

Carl Weiss* described on the basis of his personal experience what a blind person can do: "Through hearing, a blind person can learn to evaluate personality. Through much experience he can learn to identify the tone of voice that accompanies the mood or emotional response of a person. Through changes in pitch, rhythm, and quality of tone he can note the various moods corresponding to the gamut of the emotions. How well he is able to associate the various aspects of the human voice with the emotions will depend upon the degree of his intelligence, intuition, and experience in contacts with people. A blind person can identify the birds by their calls. He can often recognize trees by the sound of the breeze through the leaves. He can enjoy a symphony by the Cleveland Orchestra or the swing and sway of Sammy Kaye.

"Likewise, the sense of touch can be developed. There is a wide realm of tactual experience: a blind person can feel roughness, smoothness, degree of heat and cold, softness and hardness, dryness and wetness, sharpness, flatness, fineness, heaviness and lightness; all kinds of angles and curves; vibrations and pulsations; and indications of life such as body warmth and movement. He can feel human emotion by the shake of a hand or a touch of the arm.

"In addition, a blind person can feel with his feet, the cracks, holes, edges of steps and sidewalks, the kind of material upon which he is walking such as asphalt, gravel, dirt, or grass. With his hands he can feel the bark of trees, the structure of the leaves, and petals of flowers. He can tell through his sense of touch a Scotty from a shepherd dog, but he could not easily tell one Scotty from another. The sense of touch cannot distinguish minute details that are the distinguishing characteristics.

---

* Weiss, Carl. *Reality Aspects of Blindness as They Affect Case Work. "The Family"* February 1946.

"A blind person can further derive much satisfaction from the fragrance of flowers, fresh fruit, and perfumes.

"It would seem, therefore, that those who want to be really useful to the blind person need to understand that to live is not only to see, but also to hear, to feel with the fingers as well as with the emotions, to sense, to shape, to manipulate, to converse, to think, to walk, to smell, and to taste."

2. *Perception of Obstacles.* The fact that blind people may be able to avoid obstacles without having any direct contact with them, has been observed by many and for a long time and became the subject of a great deal of controversy and research. The latest experiments undertaken at Cornell University* have provided evidence, generally regarded as conclusive, that aural stimulation is a necessary and sufficient condition for the perception of obstacles. In these experiments blind and seeing subjects were asked to approach a wall or screen and to report their first perception of it as well as to stop before running into it. In the experiments various controls were introduced to reduce or eliminate sensory cues. Stimulation of the skin by air and sound waves and by reflected breath was found to be not responsible, while aural stimulation, particularly by the higher sound frequencies, was found to be essential for obstacle perception. The ability to perceive obstacles varies from person to person and is not confined to the blind. There is also experimental proof that systematic training in the perception of obstacles will develop this ability to equal that of experienced persons.**

In the actual performance of moving about, obstacle perception as such is only one of many perceptions which contribute to the individual's mobility. He responds with all his senses to the totality of the situation. His sense of hearing is constantly active in observing all kinds of sounds, including echoes; he interprets odors which come from many sources; he notices changes of temperature and air currents; his feet feel the nature of the ground; he observes distances in terms of time, through movement and through sound—in fact any clue that he can obtain is interpreted for the purpose of locomotion and inseparably also for that of orientation.

ADJUSTMENT TO BLINDNESS

The problem of adjustment to blindness, or reorganization under blindness, is different for those who were either born blind or be-

---

* Supa, M., Cotzin, M., and Dallenbach, K. M. *"Facial Vision": The Perception of Obstacles by the Blind.* The American Journal of Psychology, April 1944. pp. 133–183.

** Worchel, Philip and Manney, Jack. *The Effect of Practice on the Perception of Obstacles by the Blind.* Journal of Experimental Psychology, 1951. pp. 170–176.

came blind at an early age and for those who experienced the onset of blindness as mature persons.

1. *Early Blindness.* The sensory effects of blindness as well as the environmental attitudes affect the congenitally blind or those who became blind early in life from their childhood on. Education, either in residential schools or in public school classes for the blind, "must aim at giving the blind child a knowledge of the realities around him, the confidence to cope with these realities, and the feeling that he is recognized as an individual in his own right."* Educational methods should be geared to the special sensory and emotional needs of blind children in order to prepare them for integration into groups of seeing contemporaries at the time they are ready for it. Special teaching methods and whatever techniques psychology and education, psychotherapy and mental hygiene have deveolped and may develop in the future should be applied for the best interests of the individual child.

The person born blind or blinded early in life encounters environmental attitudes as he grows up and reacts to them according to patterns already discussed as adjustive or nonadjustive behavior forms. Even under the most favorable circumstances he may at times feel frustrated and dejected by the way the public feels and acts toward the blind, but in this he is not in a unique condition which would require special forms of assistance. All handicapped individuals, and all who belong in one or another way to minority groups, must make their adjustment to the attitudes of the public. The basis for it is self-confidence rooted in feelings of security and a sense of belonging. Early childhood experiences are generally regarded as essential in determining the future reaction pattern of the individual. For this and other reasons the preschool age experiences of the blind child are particularly important.

There is no doubt that the cumulative impact of treatment by the family and by the public, of the sensory effects of blindness in terms of feelings of insecurity and frustration, and of the failure of educational institutions to provide an early remedy may cause maladjustment and acute need for psychotherapeutic treatment. However, the number of normal blind men and women who take full share in the responsibilities and satisfactions of citizenship is overwhelming proof that people who became blind early in life can achieve a full measure of personal, social, and economic adjustment.

2. *Adventitious Blindness.* The clinical situation for the individual who becomes blind later in life is quite different. The onset of blindness imposes upon him more or less suddenly all the restrictions of the handicap, of which those in getting about and in

* Lowenfeld, Berthold. *Psychological Foundation of Special Methods in Teaching Blind Children.* (10., p. 89.)

controlling his environment are most seriously felt. These restrictions, and the realization that he will have to live with them for the rest of his life, are experiences of extreme severity. The person who becomes blind suddenly, reacts to this shock in the same way as other persons in extreme situations and under extreme stress. Wittkower and Davenport (9.) who studied the emotional reactions of war blinded soldiers, report that previous personality, the environment, the social situation, the occupational situation, and time are the five main factors determining the emotional reaction following the first shock impact. They found that in their unselected sample of 103 war blinded persons, 29% showed depression, 11% resentment, 24% defiance, 13% cheerfulness, 8% resignation and indifference, and 15% grossly abnormal reactions. These reaction types were determined at a time when the men studied had passed beyond the early mood fluctuations and when the reaction to their blindness had assumed a fairly stable pattern. They stress that a majority of the men examined were "normal" though sometimes excessive, and that only a comparatively small percentage displayed pathological reactions. For the latter ones the help of a psychiatrist seemed to be essential.

Adjustment to blindness is largely a process of achieving insight into one's own resources and willingness to use them. This self-realization must be supported by a re-learning of skills in order to restore economic and social adequacy. In this the blind person can be greatly aided by experienced assistance. Such assistance may be given either in special rehabilitation centers or by trained rehabilitation personnel if the home environment is advantageous. It must combine general psychotherapeutic principles with specialized knowledge in the training of certain skills such as getting about, doing personal and household tasks, reading and writing. Of course, vocational guidance, training or re-training, placement and followup are essential elements in this adjustment. It should also be stressed that the blind person does not adjust in a vacuum; his social environment also goes through changes in attitudes and learns to appraise blindness realistically.

TESTING THE BLIND

Practically all efforts to provide scientific tools for the measurement of the intelligence, aptitudes, and interests of the blind have been confined to the adaptation of tests designed for the seeing. There are a number of problems which confront anyone who wants to adapt tests for use with the blind. The standardization of tests presents considerable difficulty because the number of blind people is comparatively small, they are scattered, and far less homogeneous than other groups because of varying degree of vision, age at onset of blindness, and other personal characteristics. Tests

which are put into braille can be read by the blind only at about ⅓ of the reading rate of visual readers and skill in braille reading and comprehension varies greatly among the adult blind. Many tests can be read aloud to the blind client who may give his answers either orally, in braille, in typing, or by some other method of symbol notation. The observation of time limits in such cases provide further complications. It must also be recognized that many tests use items with which blind persons cannot be expected to be familiar since they were not exposed to them in an equal way with the seeing for whom the tests were designed.

Among the tests which have been standardized for the blind and are frequently used are the following: The Hayes-Binet Intelligence Tests for the Blind, a modification of the Terman-Merrill Revised Stanford-Binet Scale made in 1942 by Samuel P. Hayes; The Wechsler-Bellevue Intelligence Scale, Form I and Form II, and the Wechsler Intelligence Scale for Children (Dr. Hayes recommends the use of the six verbal subtests with certain modifications) ; The Stanford Achievement Tests adapted for use with the blind by Hayes; The Kuder Preference Record for Vocational Interests; and for manipulative performance tests, modified parts of The Minnesota Rate of Manipulation, The Pennsylvania Bi-Manual Worksample, and The Small Parts Dexterity Test, Part II. There is only one personality questionnaire, The Emotional Factors Inventory by Mary K. Bauman which has been designed specifically for blind adults. However, many of those personality tests which are not using visual materials, can be used with the blind with little change.

Psychologists and psychometrists who are interested in detailed information concerning these and other tests should consult "A Manual for the Psychological Examination of the Adult Blind." (1.)

Tests unquestionably have their value as diagnostic tools. However, they should be used with caution, particularly in this area where standardization on the one hand and variable factors on the other, tend to make them less reliable and valid.

In first contacts with blind persons there are certain practical problems to meet which the uninitiated might want to know about in order to be at ease himself and make his blind client feel more comfortable. The following points may be worth remembering:

1. In acting as the blind person's guide offer your arm and let him take hold of it. Walk slightly ahead of the blind person so that he can notice when you step up or down in time to be warned himself. To be sure, you might for the first time tell him that he has to step up or down and see how well he manages and then indicate by a slight hesitation that a step up or down will have to be taken.

2. If you want a blind person to sit down on a chair, place his hand on the back of the chair and he will sit down by himself. Also if he enters a car put his hand on the top of the door frame and he will do the rest.

3. In talking with a blind person use your ordinary voice—they can hear alright. Also relax and do not hesitate to use your regular vocabulary including "see" or "look" which to them, as in most cases to you also, substitutes for "understand."

4. In entering or leaving a room speak to the blind person so that he knows whether you are present. Also do this when you sit down so that he knows where you are sitting.

5. Keep doors either closed or wide open flush with the wall. Half-open doors are serious obstacles.

6. If he smokes give him an ashtray either into his hands or tell him that there is one on the desk in front of him. Don't move the ashtray or other things he is using, since he will count on having them in the same place for his use.

7. If you want to shake hands, with a blind person, you may have to take hold of his hand since he cannot see your move toward him. On the other hand you can see if he stretches out his hand to shake yours.

8. Be natural, kind, and thoughtful and do not hesitate to ask the blind person himself if you are in doubt about what would be the right thing to do. He will be glad to inform you about his preference and both of you will feel at greater ease.

SELECTED BIBLIOGRAPHY

1. Bauman, Mary K. and Hayes, Samuel P.: *A Manual for the Psychological Examination of the Adult Blind.* The Psychological Corporation, New York, 1951.
2. Bindt, Juliet: *A Handbook for the Blind.* The Macmillan Company, New York, 1952. xvi, 244 p.
3. Buell, Charles E.: *Recreation for the Blind.* American Foundation for the Blind, New York, 1951. 39 p.
4. Chevigny, Hector and Braverman, Sydell: *The Adjustment of the Blind.* Yale University Press, New Haven, 1950. xvi, 320 p.
5. Cutsforth, Thomas D.: *The Blind in School and Society.* (New Edition) American Foundation for the Blind, New York, 1951. xvii, 269 p.
6. Donahue, Wilma and Dabelstein, Donald (Ed.): *Psychological Diagnosis and Counseling of the Adult Blind.* American Foundation for the Blind, New York, 1930. 172 p.
7. National Society for the Study of Education: Forty-Ninth Yearbook, Part II. *The Education of Exceptional Children.* The University of Chicago Press, 1950. 350 p.
8. Sommers, Vita Stein: *The Influence of Parental Attitudes and Social Environment on the Personality Development on the Adolescent Blind.* American Foundation for the Blind, New York, 1944. xiii, 124 p.

9. Wittkower, E. and Davenport, R. C.: *The War Blinded: Their Emotional, Social, and Occupational Situation.* In "Psychosomatic Medicine," March-April, 1946. pp. 121-137.
10. Zahl, Paul A. (Ed.): *Blindness: Modern Approaches to the Unseen Environment.* Princeton University Press, 1950. xvi, 576 p.

☆ U. S. GOVERNMENT PRINTING OFFICE: 1952—212229

HM291
G 192
Garrett, James F., ed.
Psychological aspects of
physical disability. 1952.
c. 3

HM291
G 192
Garrett, James F., ed.
c. 3
AUTHOR
Psychological aspects of
TITLE
physical disability. 1952.

DATE LOANED	BORROWER'S NAME
11/15/66	Edward Kramer
APR 2 '67	I. Josephy Mataka
MAR 22'68	Julie Stuart 319 E 34 th

FEDERAL
SECURITY
AGENCY

Office of Vocational Rehabilitation Washington